

Department of Defence

Blamey Barracks Kapooka

Offset Management Plan

March 2026



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Blamey Barracks Kapooka Offset Management Plan

Department of Defence

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Approved by:	Selga Harrington	18/03/2026	

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Appendix D	Offset calculation
Appendix E	Conditions of approval
Appendix F	Rapid response protocol for fauna entrapment

Approved holder Declaration

Project: Blamey Barracks Kapooka Redevelopment Project, EPBC 2023/09649

Approval Holder: Department of Defence **ABN:** 68 706 814 312

Action: To redevelop the Blamey Barracks Kapooka military area near Wagga Wagga NSW, including upgrades to existing facilities, construction of new facilities and ancillary infrastructure, and involving vegetation clearing and earthworks

Declaration of Responsibility

I, **LTCOL Daniel Palmer**, as the Department of Defence for Blamey Barracks Kapooka Redevelopment Project under EPBC Act approval EPBC 2023/09649, accept full responsibility for ensuring that this Offset Management Plan (OMP) is implemented in accordance with the approved OMP issued by the Department of Climate Change, Energy, the Environment and Water (DCCEEW).

I acknowledge that failure to comply with these conditions may result in enforcement action under the EPBC Act.



Digitally signed by Daniel PALMER
2
Date: 2026.03.17 16:05:15 +11'00'

Signature: _____

Name: LTCOL Daniel Palmer

Position: Project Director

Organisation Department of Defence

Date: 17 March 2026

Declaration of Accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2025*. The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.



Digitally signed by
Daniel PALMER 2
Date: 2026.03.17
16:06:12 +11'00'

Signature: _____

Name: LTCOL Daniel Palmer

Position: Project Director

Organisation Department of Defence

Date: 17 March 2026

Abbreviations

AHD	Australian Height Datum
AWMA	Albury Wodonga Military Area
BAM	NSW Biodiversity Assessment Method 2020
BBK	Blamey Barracks Kapooka
BC Act	NSW <i>Biodiversity Conservation Act 2016</i>
BDAR	Biodiversity Development Assessment Report
Box Gum Woodland	Box Gum Woodland (abbreviation for White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland ecological community, listed as Critically Endangered under the Commonwealth EPBC Act)
Biosecurity Act	The Commonwealth <i>Biosecurity Act 2015</i>
BONS	Biosecurity and Overabundant Native Species
CAMBA	China-Australia Migratory Bird Agreement
DCCEEW	Australian Government Department of Climate Change, Energy, the Environment and Water
NSW DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
EIS	Environmental Impact Statement
EHG	Environment and Heritage Group (EHG) of the NSW Department of Climate Change, Energy, the Environment and Water. Formerly the Biodiversity, Conservation and Science Directorate (BCS)
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
GIS	Geographic Information System
ha	Hectare
JAMBA	Japan-Australia Migratory Bird Agreement
km	Kilometre
KMA	Kapooka Military Area
LGA	Local Government Area
LLS	Local Land Services
m	Metre
MNES	Matters of National Environmental Significance listed under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
OAG	Offsets Assessment Guide
OMP	Offset Management Plan

PCT	Plant Community Type
RBW	RAAF Base Wagga
RDA	Range Danger Area
ROKAMBA	Republic of Korea-Australia Migratory Bird Agreement
RRJV	Riverina Redevelopment Joint Venture
RRP	Riverina Redevelopment Program
TEC	Threatened Ecological Community
The project	BBK Redevelopment Project
WoNS	Weeds of National Significance

Executive summary

The Department of Defence is progressing the Riverina Redevelopment Program (RRP), which includes major upgrades to Blamey Barracks Kapooka (BBK), located within the Kapooka Military Area (KMA) near Wagga Wagga, NSW. The BBK Redevelopment Project (the project) encompasses infrastructure renewal, new accommodation and training facilities, and range realignment works.

As part of the environmental approvals process under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the project was deemed a controlled action due to its potential impact on Matters of National Environmental Significance (MNES), specifically the Critically Endangered White Box – Yellow Box – Blakely’s Red Gum Grassy Woodlands and Derived Native Grasslands ecological community (Box Gum Woodland).

This Offset Management Plan (OMP) has been prepared to satisfy EPBC Act approval conditions and outlines the strategy to compensate for the loss of 1.39 hectares (ha) of Box Gum Woodland. The offset area, located within the BBK Estate, was selected based on its vegetation condition, patch size, and ecological connectivity.

Key elements of the OMP

- **Impact and offset requirements:** The project will directly impact 2.56 ha of native vegetation, including 1.39 ha of Box Gum Woodland. Using the EPBC Act Offsets Assessment Guide (OAG), a total of 14 ha of offset area has been identified, meeting the 100% offset requirement.
- **Offset area description:** The selected site contains remnant woodland dominated by White Box, Blakely’s Red Gum, and White Cypress Pine. It meets EPBC Act Class C condition thresholds and offers strong potential for ecological improvement through targeted management.
- **Management actions:** A suite of actions has been developed to address key threats including overgrazing, weed invasion, erosion, pest species, and historical disturbance. These actions have been designed using the S.M.A.R.T. principles – ensuring they are Specific, Measurable, Achievable, Relevant, and Time-bound – and include fencing, weed and pest control, erosion remediation, and adaptive management.
- **Habitat quality and improvement timeframe:** The impact area was assessed as having a habitat quality score of 9, while the selected offset area was assessed with a score of 7. To meet EPBC Act requirements, the offset area will be actively managed to improve its habitat quality from a score of 7 to 9 within 15 years. This timeframe reflects a realistic period for ecological recovery and improvement, accounting for seasonal variability and the effectiveness of targeted management actions. Ongoing management and maintenance will continue for 20 years, ensuring that ecological gains are sustained and monitored beyond the initial improvement phase.
- **Monitoring and reporting:** A 20-year monitoring program will track vegetation condition, pest presence, erosion, and compliance with performance indicators. Monitoring results will be reported annually, with five-yearly audits submitted to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW).
- **Compliance and securement:** The offset area must be legally secured within six months of OMP approval. Conservation outcomes must be achieved and maintained for the duration of the approval period.
- **Risk management:** The plan includes a detailed risk matrix and corrective actions to address potential shortfalls in achieving conservation outcomes, supported by an adaptive management framework.

This OMP provides a robust, evidence-based framework to offset the ecological impacts of the project. It aligns with national conservation policies and supports the long-term protection and enhancement of the Box Gum Woodland ecological community.

1 Introduction

The Department of Defence (Defence) is undertaking a Riverina Redevelopment Program (RRP) which comprises redevelopment and upgrade works at three major Defence bases; Albury Wodonga Military Area (AWMA), RAAF Base Wagga (RBW) and Blamey Barracks Kapooka (BBK). The program aims to support Defence by providing exemplar facilities and infrastructure and promote growth in soldiers, airmen/airwomen and specialist trades and logistics that are essential to operate future capability.

Given the geographically distinct nature of the three projects, each is being managed independently and has undergone a separate environmental approvals process. However, they are grouped together under the same program solely to achieve efficiencies related to design and delivery.

The BBK Redevelopment Project EPBC 2023/09649 (the project) involves redevelopment works to renew, modernise, and sustain capabilities at BBK, which is part of Kapooka Military Area (KMA), located south-west of Wagga Wagga in NSW. The works involve comprehensive upgrades and new installations across infrastructure services (e.g. electrical, water, ICT), base-wide access roads and footpaths, and demolition of outdated buildings. New living-in accommodation (LIA) will be designed for multiple recruit companies, alongside construction and upgrades to training, working, and support facilities – including medical, physical training, welfare, and religious buildings. Additionally, enhancements to range facilities are planned, including new explosive ordnance storage and realignment of a weapons range.

The project was referred under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (EPBC 2023/09649) and approved with conditions on 6 December 2024. The EPBC Act approval conditions required the approval holder (Defence) to compensate for the loss of 1.39 hectares (ha) of EPBC Act listed Critically Endangered White Box – Yellow Box – Blakely’s Red Gum Grassy Woodlands and Derived Native Grasslands Threatened Ecological Community (TEC) (Box Gum Woodland) and submit an Offset Management Plan (OMP) for the Minister’s approval prior to commencing the project.

The Defence identified an offset area within the BBK Area Estate Base Plan within the KMA as shown in Figure 1.1.

1.1 Purpose of report

This document is the OMP for the project, which has been prepared as per condition 5 of the EPBC Act approval conditions (for the project and the EPBC Act *Environmental Offsets Policy* (Department of Sustainability Environment Water Population and Communities 2012a)).

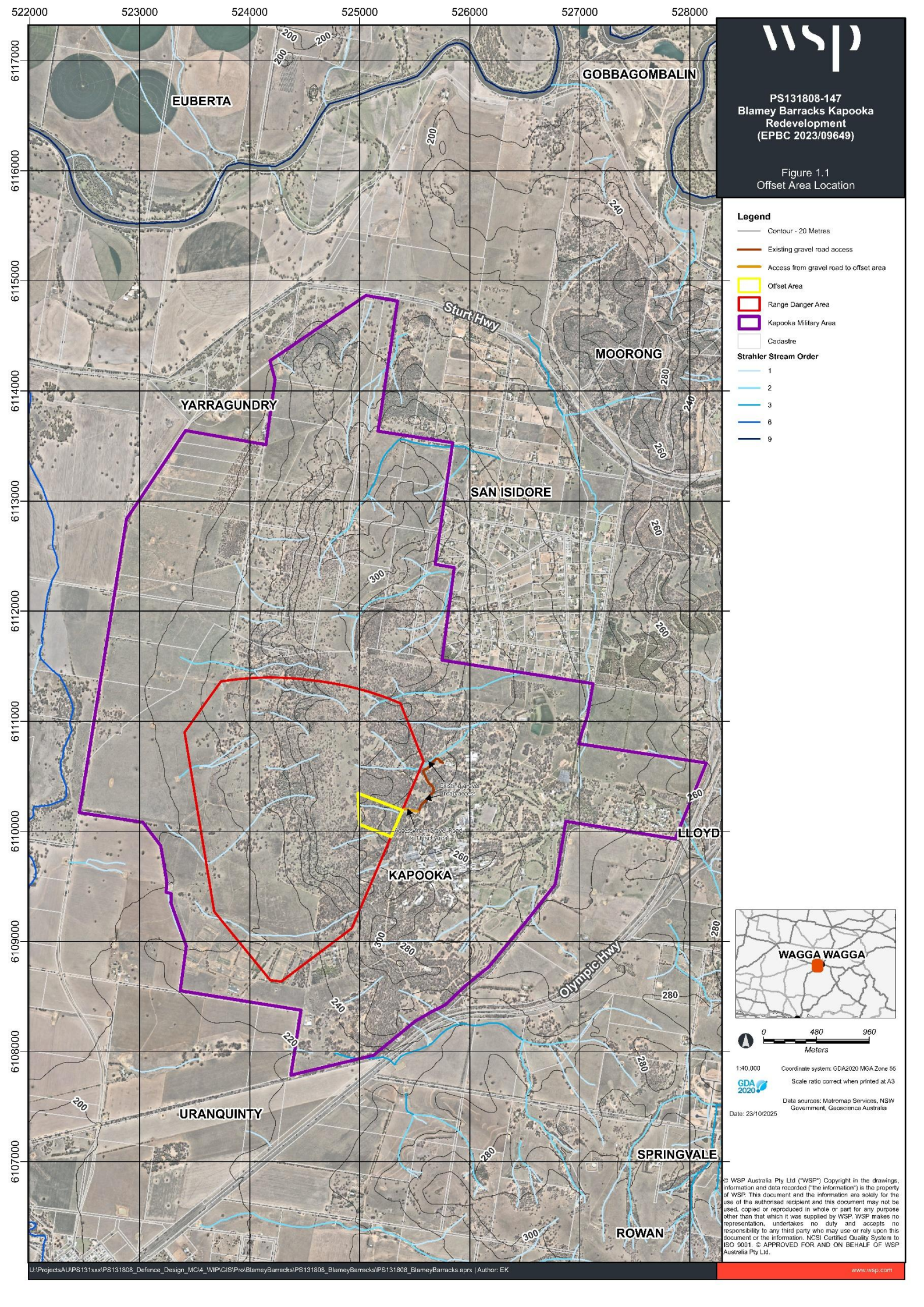
The purpose of this document is to describe the offset area, the performance outcomes to be achieved for the Box Gum Woodland, management actions to be implemented to achieve the set outcomes, risks to achieving those outcomes and appropriate corrective actions, and outline a monitoring and reporting program. It aims to demonstrate that the offset will be adequate to compensate for the project impacts on the listed TEC.

1.2 Report structure

The structure and content of the OMP is outlined in Table 1.1.

Table 1.1 Structure of OMP

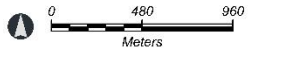
Chapter	Description
Chapter 1 – Introduction	Provides an introduction to the report purpose, structure, scope and limitations and outlines personnel involved in report preparation.
Chapter 2 – Background	Provides a background to the project including an overview of project impacts, EPBC Act approval conditions and requirements for the OMP and offset approach.
Chapter 3 – Assessment methodology	Provides an overview of methodology used to determine the offset area including desktop and site assessments and EPBC Act offset assessment guide (EPBC Act OAG).
Chapter 4 – Offset area description	Provides context and overview of the offset area, including landscape, management issues, vegetation and habitats.
Chapter 5 – Offset area suitability and calculations	Assess suitability of offset for the impacted Box Gum Woodland including assessment of the offset area against the Department of Sustainability Environment Water Populations and Communities (2012) offset assessment guidelines (Department of Sustainability Environment Water Populations and Communities 2012) to confirm the required offset commitment for the Box Gum Woodland. Also provides the EPBC Act OAG inputs presented, along with the reasoning and context for inputs below.
Chapter 6 – Offset management	Outlines proposed management actions and risks for the offset area.
Chapter 7 – Offset monitoring	Outlines proposed monitoring and reporting requirements for the offset area and identifies trigger thresholds for management.
Chapter 8 – Compliance	Addresses issues of compliance regarding EPBC Act approval conditions and outlines how the OMP addresses management and recovery objectives for Box Gum Woodland as outlined in key statutory documents and policies.
Appendices	
Appendix A	Vegetation plot data from site inspection
Appendix B	Flora and fauna species recorded during site inspection
Appendix C	Protected matter search tool results
Appendix D	Offset calculations
Appendix E	EPBC Act approval conditions
Appendix F	Rapid Response Protocol for Fauna Entrapment



PS131808-147
Blamey Barracks Kapooka
Redevelopment
(EPBC 2023/09649)

Figure 1.1
Offset Area Location

- Legend**
- Contour - 20 Metres
 - Existing gravel road access
 - Access from gravel road to offset area
 - Offset Area
 - Range Danger Area
 - Kapooka Military Area
 - Cadastre
- Strahler Stream Order**
- 1
 - 2
 - 3
 - 6
 - 9



1:40,000 Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A3
GDA 2020
Data source: Matromap Services, NSW Government, Geoscience Australia
Date: 23/10/2025

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2 Background

2.1 Ecological impact assessment

As part of the detailed design phase, an ecological assessment was undertaken to identify the biodiversity values of the site and to evaluate the potential environmental impacts associated with the proposed project. This assessment was documented in the EMM Consulting Pty Limited (2023) *Riverina Redevelopment Project: Blamey Barracks Kapooka Biodiversity Assessment*. Prepared for Riverina Redevelopment Joint Venture (EMM 2023) (EMM).

The assessment identified potential impacts on matters of national environmental significance (MNES), including listed threatened species and ecological communities protected under the EPBC Act.

EMM conducted ecological field surveys of the project impact area between September 2022 and May 2023 (EMM 2023, Department of Defence 2024). Survey activities included documenting biodiversity values and ecological constraints, conducting plot-based vegetation assessments, evaluating habitat quality, and assessing the presence of threatened species and ecological communities within the approved project impact area.

The EMM report noted that the project impact area supported a mosaic of Eucalypt forest communities in varying condition, interspersed with infrastructure and buildings associated with BBK. Intact vegetation areas were characterised by grassy Eucalypt forest with trees of mixed age classes, a sparse midstorey, and a predominantly native groundcover. Hollow-bearing trees were limited to mature individuals in less disturbed areas, with small hollows relatively common but no large hollows observed. Coarse woody debris, large logs, and leaf litter were generally scarce, offering limited habitat for fauna. No watercourses were identified within the study area.

A total of 120 flora species were recorded, comprising 77 indigenous and 43 exotic species. Two EPBC Act listed TECs, totalling 2.56 ha, were identified in the project impact area:

- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia Endangered ecological community (Grey Box Woodland), listed as an Endangered ecological community under the EPBC Act (this includes NSW Plant Community Types (PCT) 110 – Western Grey Box – Cypress Pine shrubby woodland on stony footslopes in the NSW South Western Slopes Bioregion and Riverina Bioregion).
- Box-Gum Woodland, listed as a Critically Endangered ecological community under the EPBC Act (this includes NSW PCT 267 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion).

Both TECs were assessed as being in high condition (EMM 2023), with a habitat quality score of 9 this was assigned based on the methodology outlined in Table 5.1. and is discussed in section (Section 3.3.2).

The project was assessed as impacting 1.39 ha of Box Gum Woodland and 0.01 ha of Grey Box Woodlands. The impact to TEC from the project is shown in Figure 2.1 (EMM 2023, Department of Defence 2024).

The EMM report concluded that based on the assessments of significance it was unlikely the project would have a significant impact on EPBC Act listed threatened species or ecological communities (EMM 2023, Department of Defence 2024).

The EPBC Act approval conditions for the project require offsets for the impacted Box Gum Woodland. A summary of this ecological community within the project impact area (based on the EMM assessment and project data) is provided in Table 2.1.

Table 2.1 Box Gum Woodland within the project impact area (based assessment undertaken by EMM (EMM 2023) with photos from WSP site visit)

Impact site vegetation	
Vegetation description	Within the impact area, EMM recorded vegetation consistent with White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion. This vegetation occurs on mostly flat or gently undulating landform within the impact area.
Conditions	The vegetation was recorded in both ‘Moderate’ and ‘High’ condition within the impact site. Areas of Moderate condition vegetation within the impact site have a dominance of exotic species in the groundcover, show evident disturbance and may include areas of planted native vegetation. Areas of High condition vegetation within the impact site have predominantly native groundcover, low disturbance and support a large number of mature trees. Plot data from High condition recorded a dominance of <i>Eucalyptus albens</i> (White Box) in the canopy with <i>Acacia linearifolia</i> (Narrow-leafed Wattle) also recorded. The plot also showed a high diversity of native grass and forb species within the understorey, with some weed incursion present (EMM 2023).
Consistency with EPBC Act TECs	Patches of Moderate condition vegetation within the impact area were assessed against the EPBC Act-listed Box Gum Woodland condition criteria and found to be inconsistent with the listing, having a dominance of exotic species in the groundlayer. High condition vegetation within the impact area was assessed against the EPBC Act-listed Box Gum Woodland condition criteria and found to be consistent with the listing. It was noted these areas had high native understorey diversity (EMM 2023).

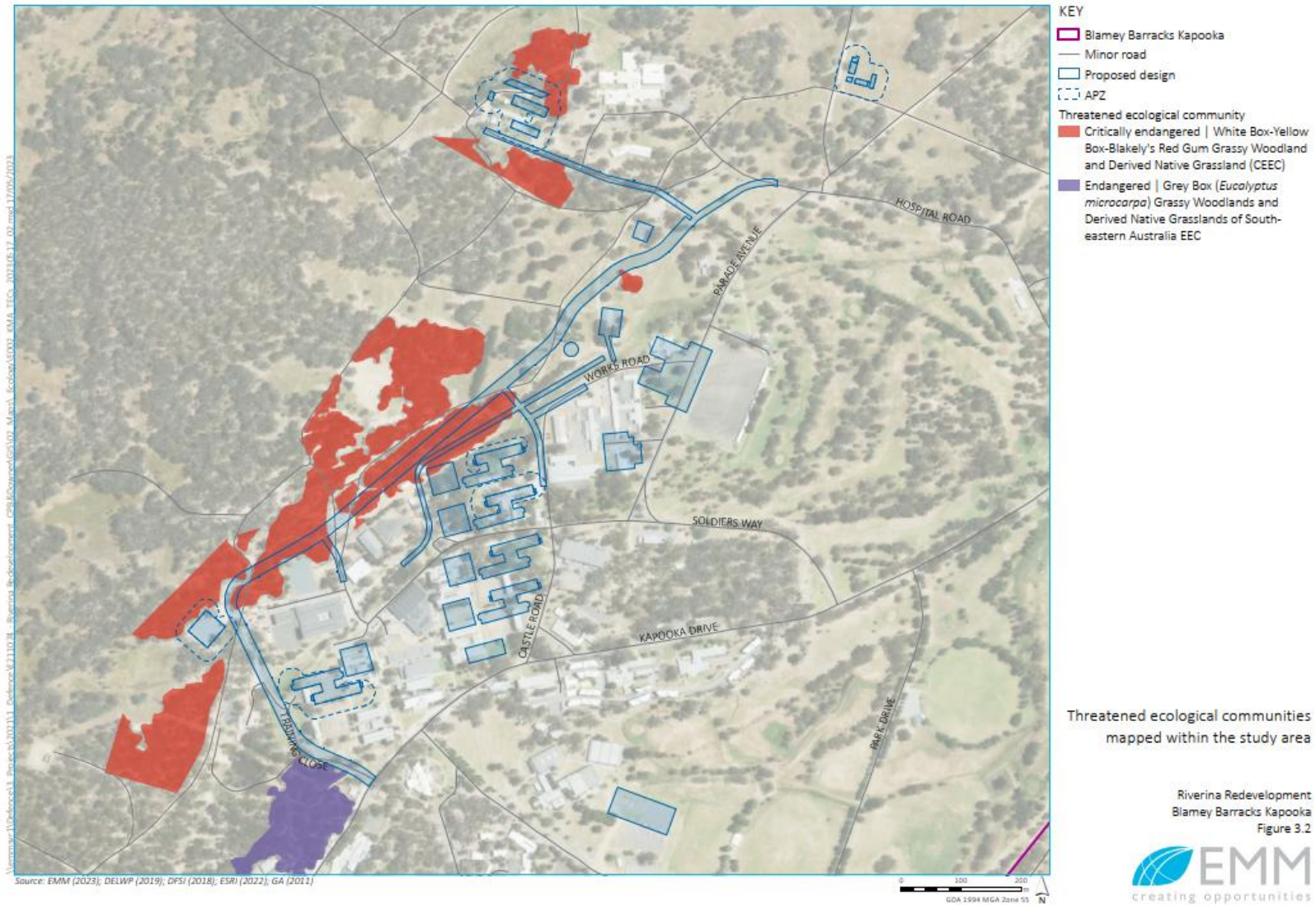


Figure 2.1 Threatened ecological communities mapped within the vicinity of the project with overlay of impact shown ('Proposed design'). From EMM Biodiversity Assessment Report (EMM 2023)



Photo 2.1 Box Gum Woodland within impact area



Photo 2.2 Box Gum Woodland within impact area

2.2 Project referral

Under the EPBC Act, proponents must refer any proposed action that is likely to have a significant impact on MNES to the Australian Government Minister for the Environment. The referral process determines whether the proposed action is a ‘controlled action’ and therefore requires formal assessment and approval under the EPBC Act.

A referral for the project was submitted in September 2023 and determined to be a controlled action due to impacts on the environment in relation to a Commonwealth action (section 28) and listed threatened species and ecological communities (sections 18 and 18As), specifically, impact to Box Gum Woodland. The Minister for the Environment determined the project would be assessed via Preliminary Documentation – further information required.

The Preliminary Documentation report (Department of Defence 2024) noted that mitigation measures are proposed for all identified impacts, with the exception of the direct clearing of the Box Gum Woodland (1.39 ha).

The project (EPBC 2023/09649) was approved with conditions on 6 December 2024. The EPBC Act approval conditions required the approval holder to compensate for the loss of Box Gum Woodland (1.39 ha) and submit an OMP for the Minister’s approval prior to commencing the project.

A full summary of referral decisions is provided in Table 2.2, below and the EPBC Act approval conditions relevant to the OMP are provided in Section 2.2.

Table 2.2 Decisions relating to the referral (Commonwealth Department of Climate Change Energy the Environment and Water 2025)

Notice name	Completed date	Date published	Status
Decision on approval of action: Approved with conditions	6/12/2024	9/12/2024	Approved
Assessment Process Notice: Extension of time in which to make a decision whether to approve a controlled action	18/11/2024	19/11/2024	Published
Assessment Process Notice: Extension of time in which to make a decision whether to approve a controlled action	6/11/2024	7/11/2024	Published
Final recommendation report completed	14/10/2024	14/10/2024	Published
Notification of Publication of Final Preliminary Documentation	20/09/2024	20/09/2024	Published
Notification of Publication of Preliminary Documentation: Invitation to Comment	10/09/2024	28/08/2024	Expired
Decision on Assessment Approach: Preliminary Documentation	21/12/2023	22/12/2023	Published
Decision whether action needs approval/Approval Required	21/12/2023	22/12/2023	Published
Invitation for Public Comment on Referral	12/12/2023	24/11/2023	Expired

2.3 Project approval conditions

Relevant EPBC Act approval conditions associated with this report specify that the approval holder must not clear more than 1.39 ha of Box Gum Woodland and that the approval holder must not clear any Box Gum Woodland outside the Box Gum Woodland direct impact area (Condition 2). The following section outlines the specific offset requirements stipulated as part of the Project’s approval.

2.3.1 EPBC Act approval conditions for offsets

Specific conditions relating to this OMP include *Conditions 5* and *6* in the EPBC Act approval conditions are referred to in Table 2.3 below.

Table 2.3 OMP approval requirements and location in document

EPBC Act approval Conditions relation to the OMP	Section reference
<i>Condition 5</i> states: “To compensate for the residual significant impacts of the Action on Box Gum Woodland, prior to commencement of the Action, the approval holder must submit to the department for approval by the Minister an OMP for an area of Box Gum Woodland in the BBK military area. The approval holder must not commence the Action unless the OMP has been approved in writing by the Minister. The approval holder must commence implementing the approved OMP no later than the commencement of the Action and continue to implement the approved OMP at least until the expiry date of this approval.”	The OMP

EPBC Act approval Conditions relation to the OMP	Section reference
<p><i>Condition 6</i> “The OMP must meet the requirements of the Environmental Offsets Policy and the Environmental Management Plan Guidelines to the satisfaction of the Minister. All commitments, including environmental outcomes, management measures, corrective actions, trigger values and performance indicators in the OMP must be SMART and based on referenced or included evidence of effectiveness. The OMP must be prepared by a suitably qualified ecologist and must include:</p>	
<p>a) detailed information on the residual impacts to Box Gum Woodland that will be compensated for by the offset area (comprising both the securement of the offset area and the vegetation condition improvements to be achieved in the offset area), including:</p>	
<p>i. all areas of Box Gum Woodland impacted by the Action,</p>	Section 2.1 (Figure 2.1)
<p>ii. a reference to the EPBC Act approval conditions to which the OMP refers,</p>	Section 2.3.1 (this table)
<p>iii. detailed information and a shapefile specifying the location, area and boundary of the offset area, and</p>	Shapefile has been provided as a separate file. It is consistent with the offset area described in Section 4 (Figure 1.1)
<p>iv. detailed baseline information on the vegetation condition of Box Gum Woodland in the offset area, achievable offset area outcomes, relevant to the conservation of Box Gum Woodland and the timeframes in which they will be achieved.</p>	<p>Section 4.2 – vegetation condition of the Box Gum Woodland in the offset area</p> <p>Section 6.4 and 6.5 – management for achievable offset area outcomes relevant to the conservation of the Box Gum Woodland</p> <p>Section 7.3.1, 7.3.2, 7.3.3– conservation targets and timeframes in which offset will be achieved</p>
<p>b) a table summarising all commitments to achieve the conservation outcomes for Box Gum Woodland in the offset area and a reference to where each commitment is detailed in the OMP,</p>	<p>Section 6.4 (Table 6.2) – Management to achieve conservation outcomes.</p> <p>Section 9.4 (Table 9.2) – how the OMP addresses conservation guidelines for Box Gum Woodland</p>
<p>c) reporting and review mechanisms to inform the department annually regarding compliance with the implementation of management measures and the attainment and maintenance of the offset area outcomes,</p>	<p>Section 7.4</p> <p>Section 9.1.2</p>
<p>d) an assessment of risks to achieving each offset area outcome and what risk management measures and/or strategies will be applied to address these,</p>	Section 6.6
<p>e) a monitoring program, which must specify measurable performance indicators and the timeframes for their achievement to gauge attainment of each offset area outcome for the protected matters,</p>	Section 7
<p>f) trigger action response plan including:</p>	

EPBC Act approval Conditions relation to the OMP	Section reference
i. performance (outcomes) indicators	Section 7.1 (Table 7.1) Section 7.3.1 and Section 7.3.2
ii. trigger values for corrective measures and explanation of their effectiveness for this purpose,	Section 7.1 (Table 7.1) Section 7.3.1 and Section 7.3.3
iii. monitoring plan , including methods, timing, effort to detect trigger values,	Section 7
iv. corrective measures to be implemented to ensure conservation outcomes for the Box Gum Woodland are achieved or maintained if trigger values are reached or performance indicators not achieved in the specified timeframes, and	Section 7.3.3 (Table 7.7)
v. details of how progress towards attainment and maintenance of conservation outcomes for Box Gum Woodland will be demonstrated, and	Section 8
g. references to related plans and conditions of approval, and how the offset area will be protected, including securement , and all offset area outcomes maintained or improved, at least until the expiry of the approval.	Section 9.4, Section 9.5 – other plans and guidance Table 6.2, Section 9.1.1 – offset area protection, securement and outcomes

2.3.2 Additional conditions relating to implementation of OMP

Conditions regarding the securement and achievement of the OMP include Conditions 7, 8, 9, 10 and 11 in the conditions of approval. These conditions in Table 2.4 are not within the scope of this OMP but relate to the OMP implementation requirements for the approval holder (Defence):

Table 2.4 Additional conditions related to implementation of the OMP

Condition	Timeframe	Person(s) responsible
Condition 7: notify the department of the date on which implementation of the OMP commenced.	Within 5 business days of commencing implementation of the approved OMP	Defence
Condition 8: To compensate for the residual impacts of the Action on Box Gum Woodland, the approval holder must secure the offset area specified in the approved OMP	Within 6 months of approval of the OMP	Defence
Condition 9: notify and provide evidence to the department in writing that the offset has been secured	Within 5 business days of the offset area site being secured	Defence
Condition 10: achieve all conservation outcomes for the offset area specified in the approved. Once achieved, the approval holder must maintain or exceed the conservation outcomes at least until the expiry date of this approval.	By the time specified in the OMP (20-years)	Defence
Condition 11: a have the offset area assessed by a suitably qualified ecologist to determine if the conservation outcomes have been achieved, and b notify the department in writing of any conservation outcome that has not been achieved and the likely reasons that this/these conservation outcomes have not been met.	Within 40 business days of the 20th anniversary of the commencement of the Action	Defence

2.4 Key personnel

The key contributors to the preparation of this OMP including their qualifications and experience are listed in Table 2.5. Their corresponding CVs will be provided separately.

Table 2.5 Contributors to the OMP

Name	Position	Role	Qualifications	Years of experience
Selga Harrington	Lead Technical Director (Ecology)	Offset technical lead Field verification of offset values OMP advisor and review	Bachelor of Science (Honours) NSW Accredited Biodiversity Assessment Method (BAM) assessor BAAS17079	23
Terri-Ann English	Principal Ecologist	OMP reviewer and advisor EPBC Act Offset calculations	Bachelor of Applied Science (Environmental Science)	24
Alicia Palmer	Senior Ecologist	Field verification of offset values OMP preparation	Bachelor of Science (Honours)	6
Michelle Patrick	Principal Ecologist	OMP preparation	Bachelor of Technology (Natural Resource Management) Master of Environment (Conservation, Land Management and Restoration) NSW Accredited BAM assessor BAAS19078	16

3 Assessment methodology

3.1 Desktop assessment

A desktop assessment was undertaken to inform the development of the OMP as outlined below.

3.1.1 Database searches

The Matters of National Environmental Significance search was completed May 22, 2025. A summary of the MNES search results can be found in Section 4.1. The MNES search includes the offset area and a search area within the locality (10 kilometre (km) buffer area). The PMST search results are available in Appendix C.

3.1.2 EPBC Act Offset document and guidelines

EPBC Act offset documents and guidelines used to guide the offset assessment and management plan included:

- Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (Department of Sustainability Environment Water Populations and Communities 2012a).
- The Department of Sustainability Environment Water Populations and Communities (2012) offset assessment guidelines, hereby referred to as the ‘offset assessment guide’ (Department of Sustainability Environment Water Populations and Communities 2012).
- How to use the Offsets Assessment Guide (OAG) (Department of Sustainability Environment Water Populations and Communities 2012).

3.1.3 Review of relevant conservation advice, recovery plans, threat abatement plans

The following key statutory documents and guidelines were reviewed as part of this assessment:

- Box Gum Woodland Approved Conservation advice: Conservation Advice for the White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland, hereby referred to as ‘approved conservation advice’. (Commonwealth Department of Climate Change Energy the Environment and Water 2023).
- Box Gum Woodland Listing Advice: Commonwealth Listing Advice on White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Threatened Species Scientific Committee 2006).
- Box Gum Woodland Recovery Plan: National Recovery Plan for White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland. (Department of Environment Climate Change and Water 2010).
- Relevant Threat Abatement Plans:
 - Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (*Sus scrofa*) (2017) (Department of the Environment and Energy 2017)
 - Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi* (Department of the Environment and Energy 2018).

3.1.4 *Prior studies completed within the proposed offset*

Existing studies and reports relating to the project and proposed offset area that were reviewed as part of this assessment include:

- Riverina Redevelopment Project: Blamey Barracks Kapooka Biodiversity Assessment (EMM 2023).
- Environmental Management Plan – Riverina Redevelopment Program – Blamey Barracks Kapooka Redevelopment Project (RRJV 2024).
- Blamey Barracks Kapooka Redevelopment Project (EPBC 2023/09649) Preliminary Documentation Report (Department of Defence 2024).
- EPBC Act Box-Gum Woodland and Vegetation Monitoring – 2021 Annual Survey– Kapooka Military Area (Ecoplanning 2022).
- Vegetation Assessment – Blamey Barracks Kapooka New South Wales (Ecolink Consulting 2023).
- SNSW Weed Monitoring and Management Report – 20/21 – RMV Annex (Spotless 2020).

3.1.5 *Other documents*

Other documents used to guide the desktop assessment included:

- A Guide to managing Box Gum Grassy Woodlands (Rawlings, Freudenberger and Carr 2010).
- EPBC Act Policy Statement 3.5 – White Box – Yellow Box – Blakely’s Red Gum grassy woodlands and derived native grasslands (Department of the Environment and Heritage 2006).

3.2 Field surveys

Field surveys were undertaken of vegetation within and surrounding the offset investigation area (Figure 3.2) on 29 and 30 April 2025 by two WSP Ecologists (Selga Harrington and Alicia Palmer). A series of methodologies were employed in accordance with the Department of Climate Change, Energy, the Environment and Water (DCCEEW) Environmental Offsets Policy and EMP guidelines, per the EPBC Act approval conditions. These methods were applied during the survey as described in section 3.2.1 to 3.2.2 below with survey effort illustrated Figure 3.2.

3.2.1 *Vegetation surveys*

3.2.1.1 Random meander surveys

Random meander surveys are a variation of the transect type survey and were undertaken in accordance with the technique described by (Cropper 1993), whereby the recorder walks in a random meander recording dominant and key plant species (e.g. threatened species, priority weeds) to confirm boundaries between vegetation communities and condition of vegetation.

The time spent in each vegetation community was generally proportional to the size of the community and its species richness, with about 15 km walked on foot over the course of field surveys. This survey technique was used to verify vegetation boundaries and stratification from the desktop analysis.

3.2.1.2 Rapid point assessments

Rapid point assessments were undertaken at regular intervals throughout the offset area, whereby the recorder collects a GPS data point to record key and dominant plant species present within each stratum (i.e. tree, shrub and groundcover species). Photographs and other relevant information were used to map the vegetation and key features present and document changes in vegetation cover and composition across the site.

3.2.1.3 Vegetation integrity plots

Vegetation integrity plots were undertaken following the BAM (Department of Planning Industry and Environment 2020) which is recognised under the *Biodiversity Conservation Act 2016* (BC Act) as described below and illustrated in Figure 3.1. While the use of BAM is not mandatory for this assessment, it was selected for its scientific robustness, repeatability and its recognition by the DCCEEW as an approved assessment methodology for offset.

Plots were undertaken variably across the north-eastern section of the RDA (approximately 60 ha area was inspected over two days) in order to determine the most appropriate location for the offset within the vicinity of the area recommended by Defence personnel ('Proposed offset investigation area' as shown on Figure 3.2), aiming to provide adequate coverage across the survey area and capture any areas of potential vegetation changes.

A total of 13 vegetation integrity plots were undertaken (Table 3.1) including four grassland plots (WG1 – WG4) and nine woodland plots (WP1, WW1 – WW8).

Table 3.1 Location and orientation of BAM vegetation integrity plots

Plot ID	Easting	Northing	Orientation (degrees)	Vegetation zone
WG1	524924	6110176	309	Box Gum Woodland – derived grassland
WG2	525047	6110151	310	Box Gum Woodland – derived grassland
WG3	525052	6110953	235	Box Gum Woodland – derived grassland
WG4	524999	6110536	308	Box Gum Woodland – derived grassland
WP1	525107	6110077	198	Box Gum woodland – moderate condition
WW1	525257	6110142	270	Box Gum woodland – moderate condition
WW2	525192	6110259	21	Box Gum woodland – moderate condition
WW3	525150	6110357	42	Box Gum woodland – moderate condition
WW4	525111	6110433	111	Box Gum woodland – moderate condition
WW5	525317	6110504	131	Box Gum woodland – moderate condition
WW6	525337	6110382	237	Box Gum woodland – moderate condition
WW7	525187	6110522	88	Box Gum woodland – moderate condition
WW8	525480	6110623	3	Box Gum woodland – moderate condition

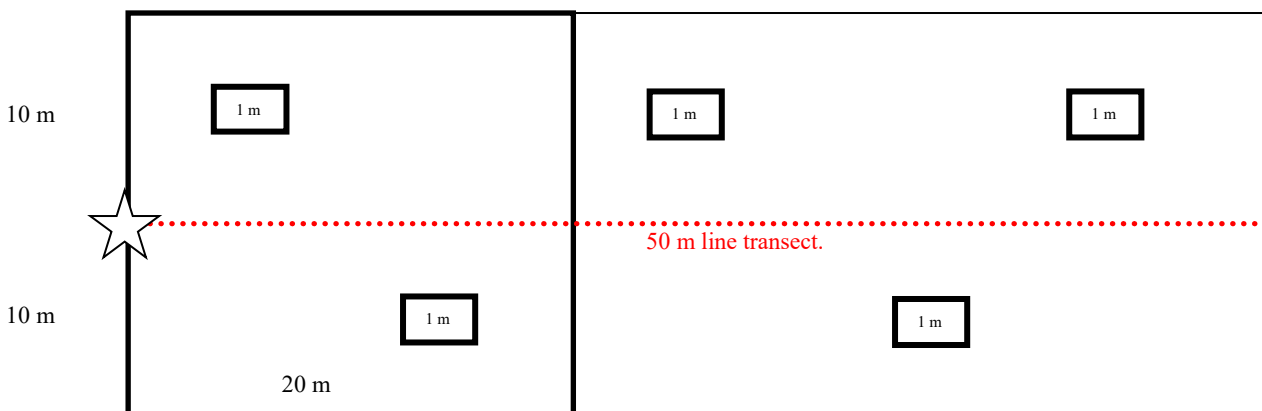


Figure 3.1 Schematic diagram illustrating the layout of the nested 20 x 50 m, 20 x 20 m and 1 x 1 m sub-quadrats used for the assessment of condition attributes at each site

The following site attributes were recorded at each vegetation integrity plot location:

- **Location** (easting – northing grid MGA 94, Zone 55).
- **Native and exotic species richness** (within a 400 m² quadrat): This consisted of recording all species by systematically walking through each 20 x 20 m quadrat. The cover and abundance (percentage of area of quadrat covered) of each species was estimated. The growth form, stratum/layer and whether each species was native/exotic/high threat weed was also recorded.
- **Number of trees with hollows** (1,000 m² quadrat): This was the frequency of hollows within living and dead trees within each 50 x 20 m quadrat. A hollow was only recorded if (a) the entrance could be seen: (b) the estimated entrance width was at least 5 cm across: (c) the hollow appeared to have depth: (d) the hollow was at least 1 m above the ground and the (e) the centre of the tree was located within the sampled quadrat.
- **Number of large trees and stem size diversity** (1,000 m² quadrat): tree stem size diversity was recorded by measuring the diameter at breast height (DBH) (i.e. 1.3 m from the ground) of living trees (>5 cm DBH) within each 50 x 20 m quadrat. For multi-stemmed living trees, only the largest stem was included in the count. Number of large trees was determined by counting all trees with DBH greater than the DBH large trees for each vegetation formation.
- **Evaluation of regeneration**: This was estimated as the presence/absence of overstorey species present at the site that was regenerating (i.e. saplings with a diameter at breast height ≤5 cm).
- **Total length of fallen logs** (1,000 m² quadrat): This was the cumulative total of logs within each 50 x 20 m quadrat with a diameter of at least 10 cm and a length of at least 0.5 m.
- **Litter cover**: This comprised estimating the average percentage groundcover of litter (i.e. leaves, seeds, twigs, branchlets and branches with a diameter <10 cm which is detached from a living plant) from within five 1 x 1 m sub-plots spaced evenly either side of the 50 m central transect.

3.2.2 *Management zones identification*

To enable targeted ecological management and ensure that actions are appropriately matched to vegetation condition and associated threats, areas within the offset were classified into management zones based on field survey results.

Vegetation patches were evaluated against the EPBC Act condition thresholds to determine their alignment with the Box Gum Woodland ecological community. Based on this assessment, areas were grouped into three indicative management categories:

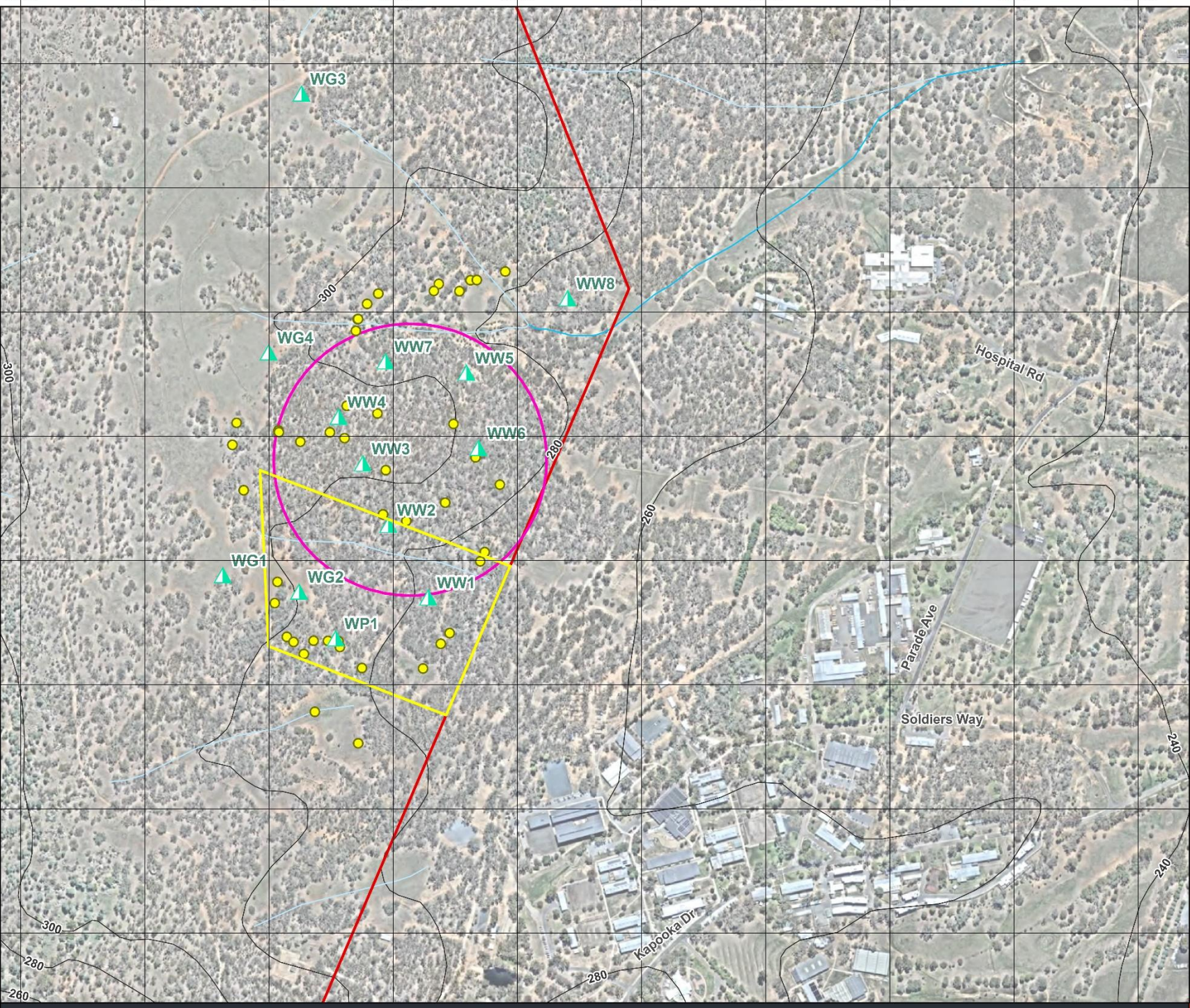
- areas meeting EPBC Act condition thresholds for Box Gum Woodland
- areas with native canopy but lacking sufficient native understorey
- areas dominated by exotic species or exhibiting high levels of degradation.

These categories form the basis for management zones, which will guide the prioritisation of ecological management actions across the offset area.

GPS data collected during field surveys was integrated into geographic information system (GIS) mapping tools to spatially represent vegetation condition and support the delineation of management zones. This mapping ensures that management actions can be spatially targeted and monitored over time.

524600 524800 525000 525200 525400 525600 525800 526000 526200 526400

6111000
6110800
6110600
6110400
6110200
6110000
6109800
6109600



PS131808-147
Blamey Barracks Kapooka
Redevelopment
(EPBC 2023/09649)

Figure 3.2
Survey Effort

Legend

- Rapid Point
- ▲ Vegetation Integrity Plot
- Contour - 20 Metres
- Strahler Stream Order**
- 1
- 2
- Offset Area
- Proposed offset investigation area
- Range Danger Area
- Cadastre



0 100 200 300
Metres

Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A3
Date: 23/10/2025
1:6,000

Data sources: Metomsp Services, NSW Government, Geoscience Australia
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3.3 Offset assessment methodology

3.3.1 Offset calculations

The offset requirements for residual significant impacts were assessed using the EPBC Act Offset Assessment Guide (OAG).

The EPBC Act OAG requires a range of specific inputs which are guided by the Commonwealth Government's *How to use the Offsets Assessment Guide* (Department of Sustainability Environment Water Population and Communities 2012b). They are fundamental to using the EPBC Act OAG and determining the required offset (hectares) for EPBC Act threatened ecological communities and species listed. Furthermore, they are informed by the proponent's committed intention to protect and manage the committed offsets into the future until additionality or ecological benefit has been demonstrated.

The method and reasoning for each of the inputs into the EPBC Act OAG are presented in the following sections and Section 4.4, along with the anticipated offset requirement in hectares, as determined by the EPBC Act OAG.

3.3.2 Habitat quality scoring

The assessment of the quality score (0-10) within the impact area and offset areas, for input to the EPBC Act OAG was conducted using the guideline methods (Department of Sustainability Environment Water Population and Communities 2012b) outlined below:

- Site condition assessment – as outlined in the guidelines, this refers to the condition of a site in relation to the ecological requirements of the ecological community. This includes considerations such as vegetation condition and structure, the diversity of species present, and the number of relevant habitat features. The site condition provides a score of out of 7.
- Site context assessment – as outlined in the guidelines, this refers to the relative importance of a site in terms of its position in the landscape, taking into account various factors such as the connectivity of the ecological community, the role of the site in relation to the community and community extent. A site context analysis was undertaken for the impact and offset sites using GIS spatial analysis. The site context assessment provides a score out of 3.

These methods providing a reliable means of assessing vegetation quality and habitat within both impact and offset areas. Further detail is provided below, with results of the habitat quality scoring is presented in Sections 4.1 and 4.4. Table 5.1 shows the habitat quality scores using the above site assessments.

3.3.2.1 Site condition assessment

A site condition assessment has been undertaken for the impact and offset sites based on existing vegetation survey data of the impact area (EMM 2023) and vegetation plots and condition assessments undertaken within the offset area by WSP (Appendix A). The site condition assessment was developed based on available data and information of the impact area and key ecological indicators of condition (Table 3.2).

Table 3.2 Site condition assessment

Criteria		Condition score
Native species diversity	At benchmark	3/3
	>50% of benchmark	2/3
	25–50% of benchmark	1/3
	<25% of benchmark	0/3
Native cover	Dominated by native species, exotic species diversity less than 5	2/2
	Dominated by native species, exotic species diversity greater than 5	1/2
	Dominated by exotic species	0/2
Groundcover vegetation cover	Total groundcover vegetation greater than 70% (low risk of erosion)	1/1
	Total groundcover vegetation less than 70% (high risk of erosion)	0/1
Mature trees/hollows	Large trees and/or hollows present	1/1
	Mature trees with large hollow rare	0/1
Fallen logs and leaf litter	Fallen logs common, ground cover >50% leaf litter	1/1
	Large logs largely absent, low cover of coarse woody debris and leaf litter	0/1
Total		17

3.3.2.2 Site context assessment

The site context assessment involves an assessment of variable parameters using GIS analysis and review of existing vegetation mapping and reports to understand the landscape context. Vegetation mapping resources used in the assessment include:

- Vegetation mapping (State Vegetation Type Map – version C2.0.M2.1) (NSW DCCEEW 2024b).
- NSW (Mitchell) Landscapes – version 3.1 (NSW DCCEEW 2020).
- Interim Biogeographic Regionalisation of Australia (IBRA version 7.0) (NSW DCCEEW 2024a).
- Vegetation mapping completed within the impact area and offset area:
 - *Blamey Barracks Kapooka Redevelopment Project (EPBC 2023/09649) Preliminary Documentation Report* (Department of Defence 2024)
 - *EPBC Box-Gum Woodland and Vegetation Monitoring – 2021 Annual Survey– Kapooka Military Area* (Ecoplanning 2022)
 - *Vegetation Assessment – Blamey Barracks Kapooka New South Wales* (Ecolink Consulting 2023)
 - *EPBC Box-Gum Woodland and Vegetation Monitoring – 2021 Annual Survey– Kapooka Military Area* (Ecoplanning 2022).

Site context was assessed as a score out of three as follows, following the NSW BAM categories for patch size:

- 0/3 = Patch size <5 ha
- 1/3 = Patch size more than 5 ha and up to 24 ha
- 2/3 = Patch size more than 25 ha and up to 100 ha
- 3/3 = Patch size more than 100 ha.

Results of the site condition assessment are presented in Sections 4.1 and 4.4.

4 Offset area description

To minimise residual impacts on Box Gum Woodland, Defence proposes to establish an offset conservation area within the BBK Area Estate Base Plan. This offset area is located within the Range Danger Area (RDA) of the KMA, specifically within the Weapons Range’s ‘Range Danger Area Safety Trace’. The site comprises a large tract of existing native vegetation situated to the west and north-west of the KMA, outside the Project’s construction zone.

4.1 Landscape features and connectivity

The project impact and offset area is located in the NSW South Western Slopes bioregion Inland Slopes Interim Biogeographic Regionalisation for Australia (IBRA) subregion. The topography is characterised by a ridgeline which runs north/south along the centre of KMA. The ridge elevation decreases towards all sides of KMA. Maximum elevation within the KMA is 370 metres Australian Height Datum (mAHD) towards the centre, while its minimum is 190 mAHD to the north where KMA approaches the Murrumbidgee River’s floodplain. Regional topography is typified by ridges and minor tablelands which increase in height to the east of KMA and decrease in height to the west of KMA.

The offset area contains woodland connectivity to other remnant patches and vegetated habitat corridors (i.e. road reserves, riparian corridors) within the region. Much of the broader landscape (i.e. surrounding Wagga Wagga LGA) has been highly modified through historical land clearing and agricultural development and as such patches of remnant woodland within the offset area and KMA area are likely to provide important linkages to other local habitat corridors, both for mobile species (i.e. birds and bats) and more sedentary woodland fauna (i.e. small birds, reptiles, terrestrial mammals).

Table 4.1 summarises the landscape features and connectivity based on the search results from the protected matters search (completed May 22, 2025) and the NSW landscape features relevant to the offset area that informs the development of this OMP.

Table 4.1 Landscape features in the offset areas

Landscape feature	
NSW landscape features	
IBRA bioregion	NSW South Western Slopes
IBRA sub-region	Inland Slopes IBRA subregion
NSW landscape regions (Mitchell landscapes)	Wonga hills and ranges Coffin rock granite hills
Local Government Area (LGA)	Wagga Wagga LGA
Rivers and streams	No major rivers or streams were recorded within the offset area. Minor ephemeral drainage lines were recorded in the site which were dry at the time of survey.
Important and local wetlands	Lake Albert – located 8 km east
Connectivity features	The offset area is located within KMA, an area containing large tracts of open woodland vegetation in areas adjacent to the existing military base and infrastructure. These wooded areas are likely to provide important habitat connectivity to existing corridors within the broader landscape including vegetated road reserves (i.e. Olympic Highway, Sturt Highway) and riparian areas such as the Murrumbidgee River corridor to the north.

Landscape feature	
Areas of geological significance and soil hazard features	The site does not contain any areas of geological significance or soil hazard feature in relation to biodiversity.
Areas of outstanding biodiversity value	No declared areas of outstanding biodiversity value occur in or near the site.
Karst, caves, crevices, cliffs, rocks and other geological features of significance	The site does not contain any areas of karst, caves, crevices, cliffs, rocks and other geological features of significance.
EPBC Act MNES search results within a 10 km radius of the offset area	
National Heritage Places	None
World Heritage Properties	None
Wetlands of International Importance (RAMSAR wetlands)	Four including: <ul style="list-style-type: none"> — Banrock station wetland complex (600–700 km downstream) — Hattah-kulkyne lakes (400–500 km downstream) — Riverland (500–600 km downstream) — The Coorong and lakes Alexandrina and Albert wetland (600-700 km downstream).
Great Barrier Reef Marine Parks	None
Commonwealth Marine Areas	None
Threatened ecological communities that are likely or have the potential to occur onsite	Three EPBC Act TEC were identified as having the potential to occur in the locality and these include: <ul style="list-style-type: none"> — Weeping Myall Woodlands (Endangered under EPBC Act) – not recorded — Box Gum Woodland (Critically Endangered under EPBC Act) present onsite in the offset area and part of the OMP — Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia (Endangered under EPBC Act) 0.01 ha present onsite.
Threatened species (plants and animals) that are likely or have the potential to occur onsite	Forty-five threatened species listed under EPBC Act including: <ul style="list-style-type: none"> — 21 Birds — one Insect — one Crustacean — four Mammals — six Fish — nine Plants — two Frogs — one Lizard.
Migratory species listed under bilateral migratory bird agreements with Japan (JAMBA), China (CAMBA) and the Republic of Korea (ROKAMBA)	Eight Migratory bird species.
Commonwealth Lands	Two hundred and seven listed Commonwealth Lands including: <ul style="list-style-type: none"> — two associated with Commonwealth Bank of Australia — 10 associated with Communications, Information Technology and the Arts (Telstra and the ABC) — 192 associated with Defence and Defence Housing Authority.

4.2 Vegetation community

4.2.1 Vegetation description

The vegetation in the offset area was selected based on vegetation condition in the impacted area, which is 1.39 ha of native vegetation in high condition. The offset area has been assessed to meet commonwealth EPBC Act TEC condition requirements. Native vegetation recorded within the offset area (Table 2.1) was considered to be broadly consistent with the impacted vegetation (Table 4.2) due to similarity of species composition and structure and landscape position.


The offset area consists of open woodland vegetation dominated by White Box (*Eucalyptus albens*) with occasional White Cypress Pine (*Callitris glaucophylla*) and Blakely's Red Gum (*Eucalyptus blakelyi*), with the vegetation occurring along the lower and undulating slopes in the landscape. Midstorey vegetation was typically sparse, though regenerating canopy species were recorded in most woodland areas within the offset area. Understorey vegetation throughout the offset area was minimal, primarily due to dry conditions and high levels of kangaroo grazing. The majority of the offset area contains native dominated understorey, though low diversity of native grass and forb species at the time of survey.

Small patches of native grassland were recorded in the offset area, between woodland patches. These areas were likely previously woodland that has been historically modified as a result of land clearing and other disturbances. Similar to the surrounding woodland, these areas contained predominantly native grassy groundcover with low species diversity. Disturbance was high in grassland patches with higher levels of weed invasion and rubbish recorded (particularly toward the southern portion of the offset area) than surrounding woodland.

Vegetation plot data is provided in Appendix A with flora species recorded in the offset area during surveys detailed in Appendix B.

Table 4.2 Vegetation within the offset area

Offset site vegetation	
Vegetation description	Vegetation within the offset area includes woodland vegetation dominated by White Box (<i>Eucalyptus albens</i>) with Blakely's Red Gum (<i>Eucalyptus blakelyi</i>) commonly occurring, occasionally with White Cypress Pine (<i>Callitris glaucophylla</i>) and Kurrajong (<i>Brachychiton populneus</i>), with patches of derived grassland vegetation recorded between woodland patches. The vegetation occurs on mostly flat or gently undulating landform within the offset area.
Condition	Vegetation within the offset was recorded as Woodland and Derived Grassland conditions. Remnant woodland areas were dominated by White Box (<i>Eucalyptus albens</i>) with Blakely's Red Gum (<i>Eucalyptus blakelyi</i>) commonly occurring, occasionally with White Cypress Pine (<i>Callitris glaucophylla</i>) and Kurrajong (<i>Brachychiton populneus</i>) also present. Shrub cover in the offset is generally sparse or absent and understorey highly grazed. Understorey vegetation within woodland patches is predominantly native (>50% cover) and a moderate diversity of grass and forb species was recorded in the ground cover (plot data for woodland plots WP1, WW1 and WW2 is provided in Appendix A). Commonly recorded understorey species in this vegetation included Wallaby Grasses (<i>Rytidosperma</i> spp.), Rough Speargrass (<i>Austrostipa scabra</i>), Hairy Panic (<i>Panicum effusum</i>), Purple Wiregrass (<i>Aristida ramosa</i>), Common Wheatgrass (<i>Elymus scaber</i>), and Sticky Everlasting (<i>Xerochrysum viscosum</i>). Small amounts of weed incursion were also recorded in these areas.

Offset site vegetation	
	<p>Derived Grassland vegetation included patches of grassland between woodland patches where canopy is likely to have been previously cleared, though the ground cover in these areas is dominated (>50% cover) by native species. Occasional canopy tree regeneration (was also present in these areas but generally exhibited <5% of the vegetation cover. Native diversity in Derived Grassland areas had a low diversity of grass and forb species (plot data for grassland plot WG2 is provided in Appendix A) and vegetation was highly grazed. Commonly recorded species in these areas included Rough Speargrass (<i>Austrostipa scabra</i>), Red Grass (<i>Bothriochloa macra</i>), and Bristly Wallaby Grass (<i>Rytidosperma setaceum</i>). These areas often exhibited greater disturbance and small amounts of weed incursion were also recorded.</p>
<p>Consistency with EPBC Act TECs</p>	<p>An assessment was undertaken for consistency of Woodland and Derived Grassland vegetation condition types within the offset site against the EPBC Act – Box Gum Woodland condition criteria.</p> <p>Woodland vegetation did not meet the criteria for Class A listing, due to low native diversity in the understorey. However, due to large patch size, regeneration and mature tree density, all patches were found to be consistent with the Class C condition criteria. See Section 4.2.2 for further detail.</p> <p>Derived Grassland vegetation did not meet the minimum condition criteria for any class of EPBC Act listing due to absence of canopy trees and low diversity in the ground cover. See Section 4.2.2 for further detail.</p>
<p>Photos – Remnant Woodland (WSP)</p>	

Offset site vegetation	
Photos – Derived Grassland vegetation (WSP)	

4.2.2 Consistency with EPBC Act Box Gum Woodland

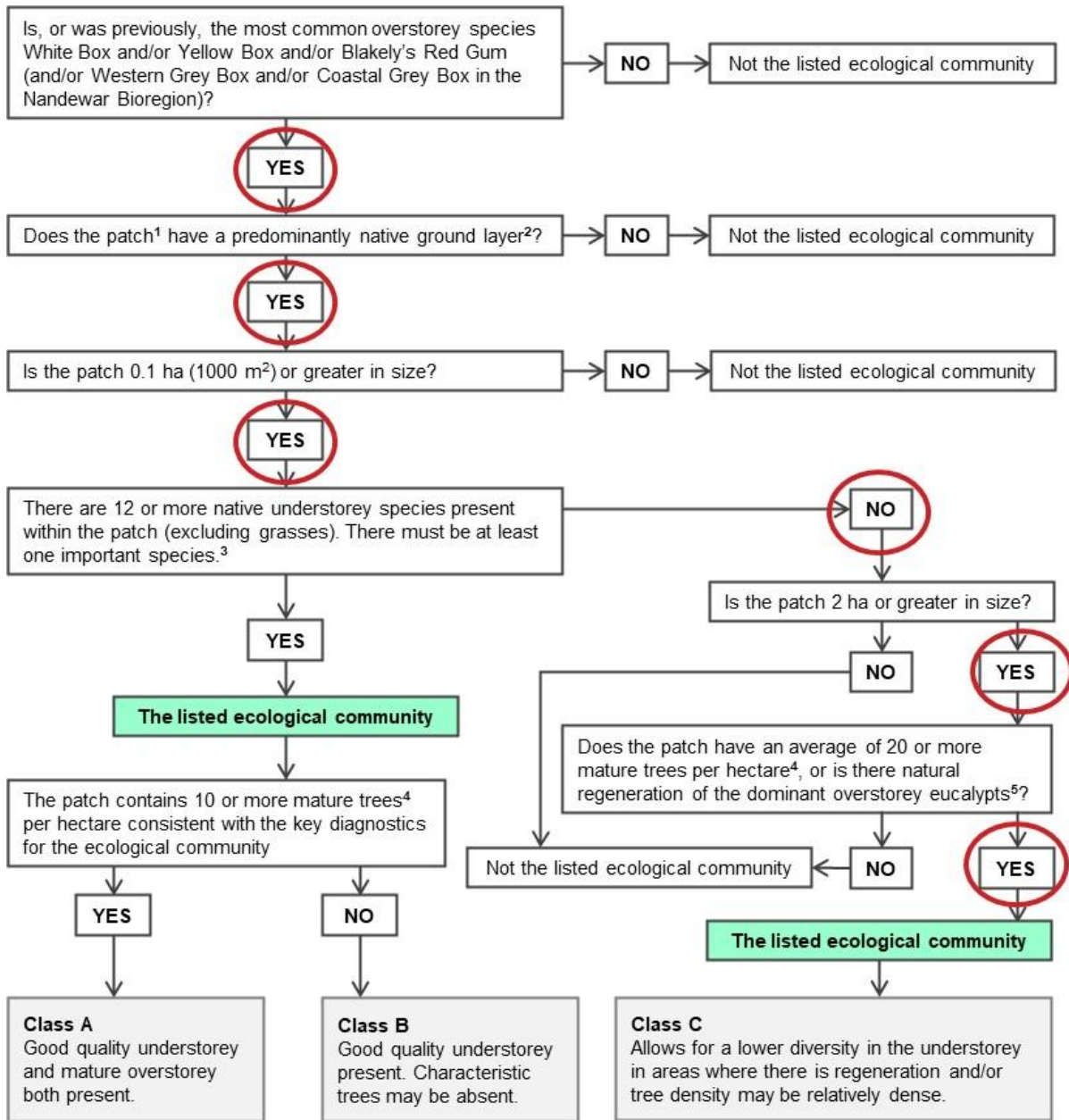
Vegetation within the offset area was compared to the condition criteria outlined in the EPBC Act listing for *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland Commonwealth Listing Advice* (Threatened Species Scientific Committee 2006). In order to meet the Commonwealth listing criteria for the Box Gum Woodland threatened ecological community, the vegetation must:

- contain (or historically have contained) dominant overstorey species consistent with the community
- have a predominantly native groundcover
- be at least 0.1 ha in size and
- must meet the listing either via diversity (i.e. high native composition in the groundlayer) or
- via large patch size, combined with high tree density and/or presence of canopy regeneration.

Specific listing criteria is shown in the identification flowchart in Figure 4.1 and Figure 4.2.

Woodland vegetation within the offset area was determined to meet the condition criteria for the community based on patch size (>2 ha), mature tree density (>20 mature trees per ha) and regeneration of overstorey species. Condition threshold assessments for woodland patches are provided below in Figure 4.1 and Table 4.1.

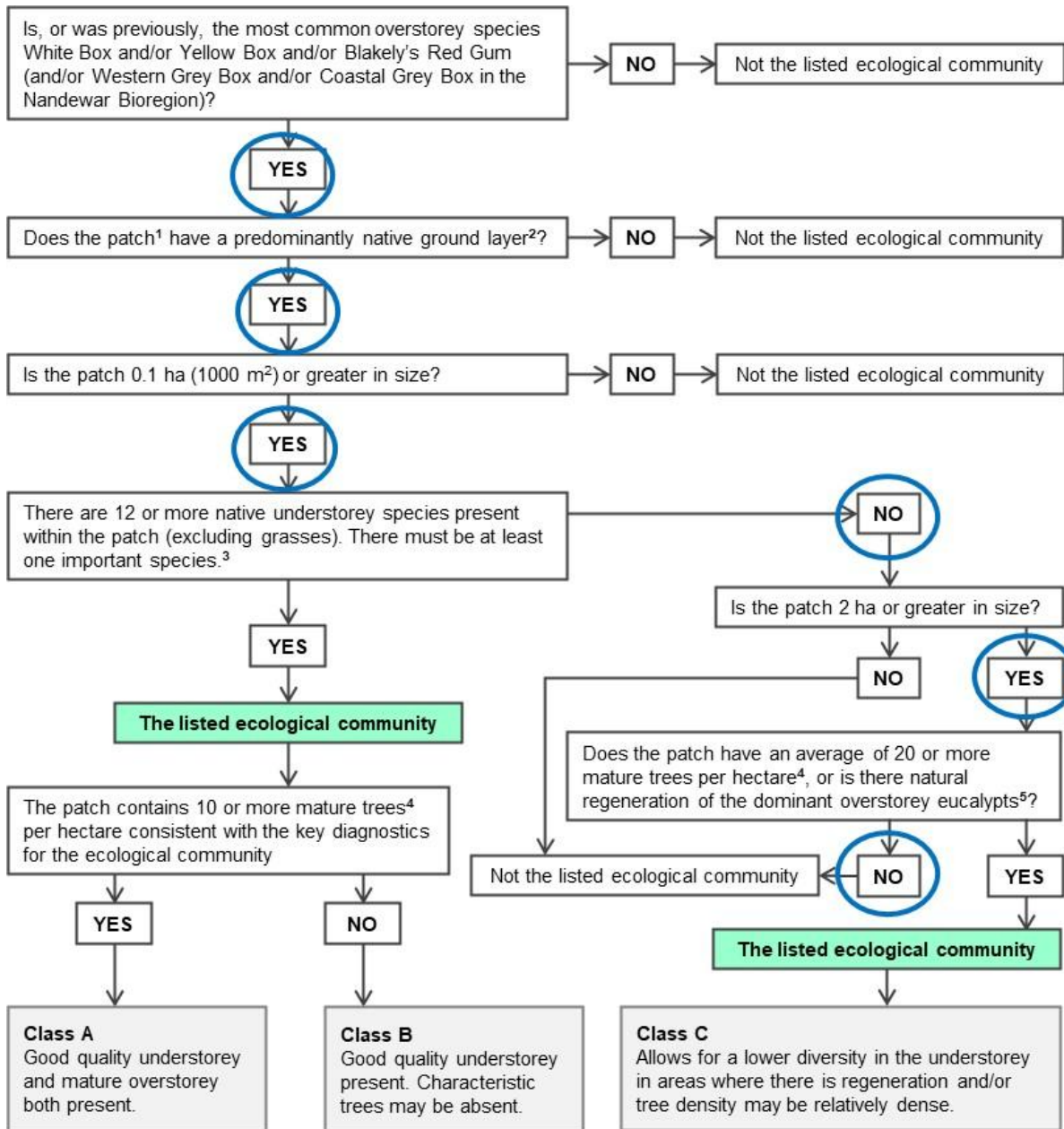
Grassland vegetation did not meet the minimum condition thresholds for the community as there was insufficient native understorey diversity (<12 native non-grass understorey species) within grassland patches in the offset area. Condition threshold assessments for grassland patches are provided below in Figure 4.2 and Table 4.1.



Please note:
To begin the assessment of criteria relating to the understorey, apply this flowchart to areas of your patch that contain the most native species in the ground layer.

Footnotes:
1. Patch – a patch is a continuous area containing the ecological community (areas of other ecological communities such as woodlands dominated by other species are not included in a patch). In determining patch size, it is important to know what is, and is not, included within any individual patch. The patch is the larger of:
a. an area that contains five or more trees in which no tree is greater than 75 m from another tree, or
b. The area over which the understorey is predominantly native.
Patches must be assessed at a scale of 0.1 ha (1000 m²) or greater.
2. A predominantly native ground layer is one where, at least 50 per cent of the perennial vegetation cover in the ground layer is made up of native species. The best time of the year to determine this is late autumn when the annual species have died back and have not yet started to regrow. (At other times of the year, you can determine whether something is perennial or not if it is difficult to pull out of the soil. Annual species pull out very easily.)
3. See <https://www.dcceew.gov.au/environment/epbc/publications/white-box-yellow-box-blakelys-red-gum-grassy-woodlands-and-derived-native-grasslands> for the list of species.
4. Mature trees are trees with a circumference of at least 125 cm at 130 cm above the ground.
5. Natural regeneration of the dominant overstorey eucalypts when there are mature trees plus regenerating trees of at least 15 cm circumference at 130 cm above the ground.

Figure 4.1 Box Gum Woodland identification flowchart (Threatened Species Scientific Committee, 2006). Assessment of woodland vegetation within the conservation area.



Please note:

To begin the assessment of criteria relating to the understorey, apply this flowchart to areas of your patch that contain the most native species in the ground layer.

Footnotes:

1. Patch – a patch is a continuous area containing the ecological community (areas of other ecological communities such as woodlands dominated by other species are not included in a patch). In determining patch size, it is important to know what is, and is not, included within any individual patch. The patch is the larger of:

- a. an area that contains five or more trees in which no tree is greater than 75 m from another tree, or
- b. The area over which the understorey is predominantly native.

Patches must be assessed at a scale of 0.1 ha (1000 m²) or greater.

2. A predominantly native ground layer is one where, at least 50 per cent of the perennial vegetation cover in the ground layer is made up of native species. The best time of the year to determine this is late autumn when the annual species have died back and have not yet started to regrow. (At other times of the year, you can determine whether something is perennial or not if it is difficult to pull out of the soil. Annual species pull out very easily.)

3. See <https://www.dcceew.gov.au/environment/epbc/publications/white-box-yellow-box-blakelys-red-gum-grassy-woodlands-and-derived-native-grasslands> for the list of species.

4. Mature trees are trees with a circumference of at least 125 cm at 130 cm above the ground.

5. Natural regeneration of the dominant overstorey eucalypts when there are mature trees plus regenerating trees of at least 15 cm circumference at 130 cm above the ground.

Figure 4.2 Box Gum Woodland identification flowchart (Threatened Species Scientific Committee 2006). Assessment of grassland vegetation within the offset area.

The 2023 approved conservation advice also outlines the minimum condition thresholds for vegetation patches to meet the EPBC Act listing for the threatened ecological community. These criteria have been separated into condition categories which are used to distinguish between patches of the ecological community of different qualities or in different states, to aid environmental management decisions. An overview of the different condition classes and the minimum requirements for a patch to meet these conditions is provided in Table 4.3.

All woodland vegetation within the offset area was assessed as meeting the Class C EPBC Act minimum condition threshold, based on patch size, mature tree density, and evidence of canopy species regeneration. In contrast, while the grassland vegetation is predominantly native, it exhibits low species diversity and therefore does not meet the minimum condition criteria for EPBC Act Box Gum Woodland listing. As the woodland vegetation satisfies the EPBC Act listing requirements for Box Gum Woodland, it is considered a suitable offset. Areas that do not currently meet the criteria will be actively managed to improve their condition and align with EPBC Act thresholds, thereby delivering a conservation gain for the ecological community.

Table 4.3 Condition classes and thresholds

Condition threshold			Assessment against vegetation within the offset area (woodland plots WW1, WW2, and grassland plot WG2)
Condition class	Patch size*	Features present	
Class A Good quality understorey and mature overstorey both present.	0.1 ha (1,000 m ²) or larger	<ul style="list-style-type: none"> — The ground layer is predominantly native* and — the understorey contains at least 12 native, non-grass species (such as forbs, shrubs, ferns and sedges) and — at least one of the understorey species should be a species recognised as ‘important’ (e.g. grazing sensitive, regionally significant, listed threatened or uncommon species) (see ‘Important’ column in plant species list at Appendix A – Species lists (Commonwealth Department of Climate Change Energy the Environment and Water 2023)) and — the patch contains 10 or more mature trees* per hectare consistent with the key diagnostics for the ecological community 	<p>Patch size for woodland plots is >0.1 ha. Both plots WW1 and WW2 have a predominantly native groundcover. However, both plots have relatively low species diversity (<12 native, non-grass species) and the plots do not contain important species. Patches within the offset area have relatively dense tree cover (>10 mature trees per hectare).</p> <p>Plot WG2 is a grassland plot with predominantly native groundcover and no mature trees recorded.</p> <p>Plots WW1, WW2, and WG2 within the offset area are not consistent with Class A condition threshold.</p>
Class B Good quality understorey present. Characteristic trees may be absent.	0.1 ha (1,000 m ²) or larger	<ul style="list-style-type: none"> — The ground layer is predominantly native* and — the understorey contains at least 12 native, non-grass species (such as forbs, shrubs, ferns and sedges) 	<p>Patch size for woodland plots is >0.1 ha. Both plots WW1 and WW2 have a predominantly native groundcover. However, both plots have relatively low species diversity (<12 native, non-grass species) and the plots do not contain important species.</p>

Condition threshold			Assessment against vegetation within the offset area (woodland plots WW1, WW2, and grassland plot WG2)
Condition class	Patch size*	Features present	
		<p>and</p> <ul style="list-style-type: none"> at least one of the understorey species should be a species recognised as ‘important’ (e.g. grazing sensitive, regionally significant, listed threatened or uncommon species) (see ‘Important’ column in plant species list at Appendix A – Species lists (Commonwealth Department of Climate Change Energy the Environment and Water 2023)) 	<p>Patch size for grassland plots is >0.1 ha. Plot WG2 is a grassland plot with predominantly native groundcover. One important species (<i>Sida corrugata</i>) was recorded in this plot, however the plot also contained low species diversity overall (<12 native non-grass species).</p> <p>Plots WW1, WW2 and WG2 within the offset area are not consistent with Class B condition threshold.</p>
<p>Class C</p> <p>Allows for a lower diversity in the understorey in areas where there is regeneration and/or tree density may be relatively dense.</p>	<p>2 ha (20,000 m²) or larger</p>	<ul style="list-style-type: none"> The ground layer is predominantly native* <p>and</p> <ul style="list-style-type: none"> the patch contains 20 or more mature trees* per hectare <p>and/or</p> <ul style="list-style-type: none"> The patch contains natural regeneration of the dominant overstorey eucalypts 	<p>Patch size for woodland plots is >2 ha. Both plots WW1 and WW2 have a predominantly native groundcover. Based on plot data/aerial imagery woodland patches typically contain >20 mature trees per hectare and canopy regeneration was present in both WW1 and WW2.</p> <p>Plot WG2 is a grassland plot with predominantly native groundcover and no mature trees recorded.</p> <p>Plots WW1 and WW2 within the offset area are consistent with Class C condition threshold. Plot WG2 is not consistent with Class C threshold.</p>
Conclusion	<p>Overall, woodland vegetation within the offset area is consistent with the EPBC Act Class C condition threshold for Box Gum Woodland, based on patch size, tree density and regeneration of canopy species.</p> <p>Grasslands within the offset area are not consistent with the Box Gum Woodland minimum condition thresholds.</p>		

*Note: The following definitions apply to this table of condition categories (also refer to section 2 Identifying areas of the ecological community):

Patch: a continuous area containing the ecological community. The patch is the larger of:

- an area that contains five or more trees in which the gap between the outer canopy of any tree and the outer canopy of the nearest tree is no greater than 75 m, or
- the area over which the ground layer is predominantly native (at least 50% of the perennial vegetation cover in the ground layer is made up of native species).

The ground layer is the structural layer closest to the ground containing grasses, forbs and sub-shrubs (below 50 cm tall).

Regeneration of dominant overstorey species: the patch contains eucalyptus saplings of the dominant species that are 5 cm diameter or greater at breast height.

Mature trees are those with a circumference of at least 125 cm measured at a height of 130 cm above the ground (equivalent to diameter of 40 cm) (source: (Commonwealth Department of Climate Change Energy the Environment and Water 2023)).

4.3 Condition

4.3.1 Disturbance

The offset area consists predominantly of open woodland vegetation with patches of cleared grassland. Evidence of previous landscape management is evident to the south of the site, where soils are corrugated or disturbed as a result of ripping and logs and swales were recorded. Previous disturbance was also evidenced by discarded metal, old building materials and footings, ammunition, increased weed cover, and variations in soil depth and erosion.

Vegetation appeared less disturbed in the northern portion of the offset area, consisting of remnant woodland with increased tree density and less evidence of disturbance.

4.3.2 Weeds

Weed density was generally low across the offset area, though slightly higher levels of weeds were recorded to the south of the site, around the edges of Box Gum Woodland and within disturbed and cleared areas (including some areas of native grassland).

Nine weed species were recorded within the offset area and immediately surrounding area during surveys including: Pines (*Pinus* spp.), Horehound (*Marrubium vulgare*), St. John's Wort (*Hypericum perforatum*), Fleabane (*Conyza bonariensis*), Saffron Thistle (*Carthamus lanatus*), Patterson's Curse (*Echium plantagineum*), Proliferous Pink (*Petrorhagia nanteuilii*), Aloe (*Aloe* spp.) and African Boxthorn (*Lycium ferocissimum*). Of these, four (*Pinus* spp., *Hypericum perforatum*, *Carthamus lanatus* and *Lycium ferocissimum*) are listed as High Threat weeds under the NSW BAM (Department of Planning Industry and Environment 2020) and are recognised as Priority weeds within the Wagga Wagga LGA under the *NSW Biosecurity Act 2015* (NSW Biosecurity Act). Additionally, *Lycium ferocissimum* is also listed as a Weed of National Significance (WONS) (Centre for Invasive Species Solutions 2025).

Priority weeds are those listed under the *NSW Biosecurity Act 2015* and Wagga Wagga City Council's Biosecurity Weed Policy due to their biosecurity risk and requirement for targeted control. High Threat weeds are defined under the *NSW Biodiversity Assessment Method (BAM)* as species that are very difficult to manage and poses a significant risk to biodiversity. Weeds of National Significance (WoNS) are recognised at the national level for their invasiveness and environmental or economic impact. These classifications provide the basis for how weed species are prioritised for control within the offset area and broader KMA, which has previously been subject to targeted weed management programs.

The broader KMA, which includes the offset area, has previously been managed for weeds as part of the SNSW Weed Monitoring and Management Program (Spotless 2020), though this program is not currently in operation. The program aimed to target weed species of highest densities, to prevent further spread and infestations, with focus on protecting the EPBC Act listed Box Gum Woodland areas. The program aimed to use integrated weed control, including methods such as cell grazing, Biosecurity and Overabundant Native Species (BONS) control, slashing, and spot spraying.

Some of the weeds that were previously considered to be of highest risk within the KMA included African boxthorn (*Lycium ferocissimum*), Apple of Sodom (*Solanum linnaeanum*), Bathurst burr (*Xanthium spinosum*), Blackberry (*Rubus fruticosus* sp. agg.), Caltrop (*Tribulus terrestris*), Fleabane (*Conyza bonariensis*), Horehound (*Marrubium vulgare*), Khaki weed (*Alternanthera pungens*), Paterson's Curse (*Echium plantagineum*), Silver Nightshade (*Solanum elaeagnifolium*), Slender Thistle (*Carduus pycnocephalus*), Spiny Burr Grass (*Cenchrus longispinus*), St Barnaby's Thistle (*Centaurea solstitialis*) and St John's Wart (*Hypericum perforatum*) (Spotless 2020).

4.3.3 Pest species

Both exotic and environmental pest fauna species were recorded within and surrounding the offset area during surveys. One exotic pest fauna species (European Red Fox, *Vulpes vulpes*) was recorded on several occasions within the offset area and immediately surrounding area during surveys. In addition, evidence of European Rabbits, *Oryctolagus cuniculus* including scats and warrens were also recorded. Both species are listed as priority pest species under the NSW Biosecurity Act and the Riverina Regional Strategic Pest Animal Management Plan (NSW Local Land Services 2024) due to their significant impacts on biodiversity, agriculture, and ecosystem function.

Eastern Grey Kangaroos (*Macropus giganteus*) were observed in large numbers across the offset area. While native, they can be considered environmental pest species where populations are elevated, due to the significant grazing pressure they exert on vegetation.

4.4 Management issues

Key management issues noted for the offset area during survey include:

- **Erosion** – Soil erosion poses a significant threat to the ecological integrity of Box Gum Grassy Woodlands. When vegetation is removed – whether through clearing, overgrazing, or cultivation – the protective groundcover is lost, exposing the soil to wind and water. This leads to the loss of nutrient-rich topsoil and native seed banks, which are critical for regeneration. As erosion progresses, water infiltration declines, further degrading soil structure and reducing the capacity of the woodland to support diverse native plant communities. These changes compromise the woodland's ability to recover naturally, diminish habitat quality, and increase vulnerability to weed invasion and salinity.

Erosion was recorded throughout the offset area, in the form of both artificial swales from previous land use and natural erosion in gullies and drainage lines (Photo 4.1 and Photo 4.2). Minor erosion was also noted as a result of rabbit warrens (Photo 4.3).
- **Weeds** – weeds establish in Box Gum Woodland when disturbance, bare ground, or high nutrient levels create favourable conditions. Invasive species outcompete native plants, alter fire regimes, and reduce habitat quality. Dense swards of exotic grasses, such as Coolatai (*Hyparrhenia hirta*) and African lovegrass (*Eragrostis curvula*), suppress native regeneration and diminish structural diversity. Minor weed invasion was recorded in the offset area, with most weeds recorded in more disturbed and previously cleared areas (treeless areas) in the southern portion (Photo 4.7 and Photo 4.8).
- **Grazing** – heavy or continuous grazing by livestock, kangaroos, rabbits, and feral animals can severely impact Box Gum Woodland. It leads to the loss of palatable native grasses and forbs, soil compaction, and increased weed invasion. Overgrazing also suppresses natural regeneration of trees and shrubs, altering species composition and reducing biodiversity. High levels of grazing were recorded throughout the entirety of the offset area. Grazing is likely to be predominantly by Eastern Grey Kangaroos (as large numbers of kangaroos were recorded during surveys) though other macropods were also recorded as well as evidence of feral herbivores (rabbits). Limited groundcover was recorded in Box Gum Woodland and grassland areas (Photo 4.6).
- **Rubbish** – rubbish was recorded throughout the offset area, primarily in the form of old ammunition, building materials and scrap metal (Photo 4.5). These materials were most commonly found in previously disturbed or cleared areas, particularly where vegetation had been modified for past land uses. The presence of rubbish contributes to ongoing degradation of Box Gum Grassy Woodlands by disrupting soil and vegetation structure, impeding regeneration, and creating microhabitats that may favour pest species or weed establishment. In addition to being a physical barrier to restoration, rubbish can also signal historical disturbance and land use change, which may require targeted remediation to restore ecological function and improve habitat quality.

- Pest fauna – including feral animals such as rabbits, foxes, goats, and pigs, pose a significant threat to the ecological integrity of Box Gum Grassy Woodlands. These animals contribute to overgrazing, soil disturbance, and vegetation loss, particularly affecting sensitive groundcover and regenerating seedlings. Rabbits, for example, compete with native herbivores and selectively graze on palatable native plants, inhibiting regeneration and altering species composition. Pest fauna species recorded on the offset area included European Rabbits (*Oryctolagus cuniculus*) and European Red Foxes (*Vulpes vulpes*) (Photo 4.3 and Photo 4.4).
- Historical disturbances – historical disturbances were recorded as a result of previous land use including stockpiling of soil, creation of artificial swales, evidence of old buildings and historical vegetation clearing (tree removal). These disturbances created localised changes in landscape formation and vegetation composition and often resulted in increased weed invasion. The physical modifications to the terrain and removal of native vegetation have created conditions conducive to weed invasion, further degrading habitat quality and reducing the resilience of Box Gum Woodland remnants.



Photo 4.1 Example of erosion (small gully with weed invasion *Aloe* spp.) recorded in offset area



Photo 4.2 Example of erosion (gully) with rubbish present in foreground, recorded in offset area



Photo 4.3 Example of old rabbit warrens (eroded) recorded in offset area



Photo 4.4 Example of rabbit scats recorded in offset area



Photo 4.5 Example of rubbish (sheet metal) recorded in offset area



Photo 4.6 Example low biomass recorded throughout offset area (native grassland)



Photo 4.7 Example of weed species recorded (*Pinus* spp.)



Photo 4.8 Example of weed species recorded *Lycium ferocissimum*

5 Offset area suitability and calculations

The offsets assessment guide (Department of Sustainability Environment Water Population and Communities 2012a) has been applied to confirm the required offset commitment for the Box Gum Woodland (see Appendix D). The calculated offset for Box Gum Woodland has been determined by the EPBC Act OAG inputs presented, along with the reasoning and context for inputs below.

5.1 Offset area selection

Defence identified a proposed offset investigation area within the KMA as having potential to meet the offset requirements (Figure 3.2). This area, located within the BBK Area Estate Base Plan, comprises a large tract of existing native vegetation, is in close proximity to the impact area, and was known to contain the listed Box Gum Woodland ecological community.

To assess the suitability of this area, WSP conducted field surveys focusing on vegetation structure, composition, and condition. The surveys found that the southern portion of the proposed offset investigation area was the most appropriate for offsetting, due to its ecological similarity to the impacted site. This area was dominated by mature White Box (*Eucalyptus albens*), with occasional White Cypress Pine (*Callitris glaucophylla*) and Blakely's Red Gum (*Eucalyptus blakelyi*). Vegetation transitioned into areas dominated by smaller, denser Blakely's Red Gum on upper northern slopes. The site also demonstrated high management potential, with low levels of weed invasion, erosion, and pest species recorded.

Based on these findings, the offset area was confirmed (Figure 3.2). The offset area aligns with key offset criteria, including vegetation structure and composition, ecological equivalence to the impacted site, strong potential for long-term management, and vegetation condition that met the minimum thresholds required for the impacted Box Gum Woodland – thereby satisfying the 'like for like' offset requirement.

5.2 Offset calculations

The offsets assessment guide (Department of Sustainability Environment Water Populations and Communities 2012) has been applied to confirm the required offset commitment for Box Gum Woodland (see Appendix D). In accordance with the EPBC Act Environmental Offsets Policy, the offset must deliver a habitat quality score equal to or greater than that of the area being impacted. The impact site was determined to have a habitat quality score of 9; therefore, the offset site must meet or exceed this score to satisfy the offset requirements. The calculated offset for Box Gum Woodland has been determined by the EPBC Act OAG inputs presented, along with the reasoning and context for inputs below.

5.2.1 Habitat quality scoring

Habitat quality scoring was based on methods outlined in Section 3.3.2 and is calculated as summarised in Table 5.1.

Table 5.1 Habitat condition assessment of both the impact area and offset area

Criteria	Impact area	Offset area
Condition assessment		
Native species diversity	3/3 Native species diversity at benchmark	1/3 Native species diversity 25–50% of benchmark
Native cover	1/2 Dominated by native species, exotic species diversity greater than 5	2/2 Dominated by native species, exotic species diversity less than 5
Total groundcover vegetation cover	1/1 Total groundcover vegetation greater than 70% (low risk of erosion)	0/1 Total groundcover vegetation less than 70% (high risk of erosion)
Mature trees/hollows	1/1 Large trees and/or hollows present	1/1 Large trees and/or hollows present
Site context		
Both the offset area and the impact area occur within the broader KMA as the offset area occurs within 200 m of the impact area, the broad site location for both development and offset site is the same with equivalent landscape connectivity values based on patch size and mapping. Patch size definitions within the approved conservation advice for the Box Gum Woodland ecological community include the definition “an area that contains five or more trees in which the gap between the outer canopy of any tree and the outer canopy of the nearest tree is no greater than 75 m”. Using GIS analysis of tree density, both the impact site and offset area are likely to occur within the same patch of vegetation.		
Site context	3/3 Patch is greater than >100 ha	3/3 Patch is greater than >100 ha
TOTAL	9/10	7/10

5.2.2 EPBC Act OAG inputs

The project will result in a direct impact to 1.39 ha of Box Gum Woodland, listed as Critically Endangered under the EPBC Act.

Table 5.2 summarises the offset requirements from the impact of 1.39 ha of Box Gum Woodland.

Table 5.2 Impact and EPBC Act OAG for Box Gum Woodland

Specific input	Input value	Reasoning and context
MNES		
Name	Box Gum Woodland	
EPBC Act status	Critically Endangered	
Annual probability of extinction	6.8%	Auto generated – based on International Union for the Conservation of Nature (IUCN) category definitions
Impact EPBC Act OAG		
Area to be impacted	1.39 ha	Extent of direct Project-related residual impact of Box Gum Woodland. Based on approved disturbance limit.
Impact quality score	9	Survey of the impact area (EMM 2023) identified the Box Gum Woodland to be in high condition, with at least 50% of the ground layer made up of perennial native species and a larger number of mature trees. The species diversity recorded was at benchmark values (26) but 9 exotic species were recorded at low densities. This included one high threat weed (<1% cover). See Sections 3.3.2 and 5.2.1 for more detail on scoring.
Total quantum of impact (adjusted hectares)	1.25	Automatic output
EPBC OAG		
Offset quality score	7	Based on WSP ecological surveys. Understorey vegetation was typically sparse, though regenerating canopy species were recorded in most woodland areas within the offset area. Understorey vegetation throughout the offset area was minimal primarily due to high levels of grazing recorded and dry conditions. Native grassland areas between woodland patches were generally more disturbed than surrounding woodland but regeneration of canopy species on the interface with woodland areas was recorded. Slightly higher levels of weeds and rubbish were recorded at the edges of woodland and in grassland areas indicative of past disturbance. Species diversity recorded was moderate in both woodland areas (average of 12) and in grassland areas (average of 11). See Sections 3.3.2 and 5.2.1 for more detail on scoring.
Future quality without offset	6	Is the estimate of the habitat quality at this future time based on a business-as-usual scenario. Current management of the BBK offset area is limited to kangaroo management with little weed or pest management due to access restrictions i.e. considering minimum management practices. Continuing with the current management, it is likely the Box Gum Woodland would decline over the 20-year timeframe. This would likely result in an increase in disturbances and weed species and a decrease in the composition and abundance of native species, due to unmanaged and increasing threats (i.e. intensive grazing and weed invasion).

Specific input	Input value	Reasoning and context
Future quality with offset	9	<p>The future quality of the Box Gum Woodland within the offset area is based on the management actions focussed on key threatening processes, outlined in this plan, and applied to the offset areas, include:</p> <ul style="list-style-type: none"> — weed control — pest control — grazing management including the provision of exclusion fencing to manage grazing — soil erosion management. <p>The effective implementation of the OMP and protection mechanisms will overtime (20 years) assist the ecological restoration. It is expected that Box Gum Woodland would improve with ongoing active management and monitoring of threats such as kangaroos, weeds and pests, with an increase in groundcover vegetation, increase in species diversity through natural and assisted regeneration processes, decrease in weed cover.</p>
Time horizon		
Risk-related time horizon	20	<p>The EPBC Act OAG applies a maximum time horizon of 20 years for offset evaluation. In line with this, it is expected that the offset area will be secured for at least 20 years to demonstrate that the risk of loss is effectively mitigated and to meet conservation objectives. While long-term or perpetual protection is preferred, the 20-year timeframe provides a sufficient basis for assessing offset adequacy under current policy setting.</p>
Time until ecological benefit	15	<p>This OMP provides specific management actions to improve and restore the ecological condition of Box Gum Woodland.</p> <p>The offset area contains Box Gum Woodland TEC with regenerating canopy, relatively low weed cover and floristic diversity in the ground cover. Key ecological benefits anticipated are the protection of existing values and regeneration of ground cover vegetation with the installation of exclusion fencing. While the natural development of tree hollows may take several decades, the selected 15-year management timeframe reflects the expected period for Eucalyptus species to reach early maturity under typical conditions (Rawlings, Freudenberg and Carr 2010). This timeframe also accommodates seasonal variability (i.e. drought) and aligns with the known effectiveness of weed and pest control measures in delivering measurable ecological outcomes.</p>

Specific input	Input value	Reasoning and context
Risk of loss		
Risk of loss without offset	0%	<p>The risk of loss without offset has been determined using the Figure 4 flowchart from <i>Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act</i> (Department of the Environment and Energy, 2017), a report to the National Environmental Science Program (NESP). In particular:</p> <p><i>Does the offset area contain a threatened species or ecological community?</i> YES</p> <p><i>Is there credible site-specific evidence to indicate development will occur within the foreseeable future?</i> NO</p> <p>Based on this scenario (Pathway C) the risk of loss = average annual background rate of loss x time horizon.</p> <p>Using the information provided in Appendix One of the NESP Guideline, for the Wagga Wagga LGA the average annual background rate of loss is 0.10 and the risk of loss over 20 years is 1.90%.</p> <p>The offset is part of the RDA, therefore vegetation clearing across the area has been limited, and less than the average annual background rate of loss of 1.9 %. This limited vegetation clearing scenario is envisaged to continue in the future and therefore, an average annual background rate of loss of 0% has been adopted, resulting in a risk of loss over 20 years of 0%.</p>
Risk of loss with offset	0%	<p>The risk of loss with offset has been determined using the Figure 3 flowchart from NESP Guideline. In particular:</p> <p><i>Does the offset area contain a threatened species or ecological community?</i> YES</p> <p><i>Will the tenure of the offset area be changed to secure protection?</i> YES</p> <p><i>Would development induced clearing of the offset area due to allowable activities trigger an offset requirement under any legislation?</i> YES</p> <p>Based on this scenario (Pathway A) the risk of loss = 0%. Securing the offset via a legally binding mechanism for conservation purposes is associated with a risk of loss (with offset) value of 0%.</p> <p>The percentage of confidence that the risk mitigation measures, applied to the committed habitat offset over the 20-year management timeframe, are successful in ensuring that loss of the species and its habitat is averted.</p>
Confidence in result		
Of risk-related time horizon	80%	The level of confidence that the management measures to be applied to the Box Gum Woodland will avert the risk of loss of the ecological community through a legal mechanism.
Of time until ecological benefit	80%	The percentage of confidence that the risk mitigation measures applied to the committed habitat offset over the 20-year management timeframe are successful in ensuring that loss of the species and its habitat is averted.
Calculated % of impact offset	101.85%	Automatically calculated degree to which the offset compensates for the total quantum of impact.

Specific input	Input value	Reasoning and context
Calculated offset required (ha)	14	Calculated land-based offset commitment generated by the inputs to the OAG calculations.
Total offset (ha)	14	Based on the calculated offset required to obtain 100% offset requirement

5.3 Compliance with EPBC offset policy

In assessing suitability of an offset under the EPBC Act, the offset package must be consistent with the EPBC Act offset principles (Figure 5.1). The offset package has been assessed against these principles and is considered to be consistent (Table 5.3).

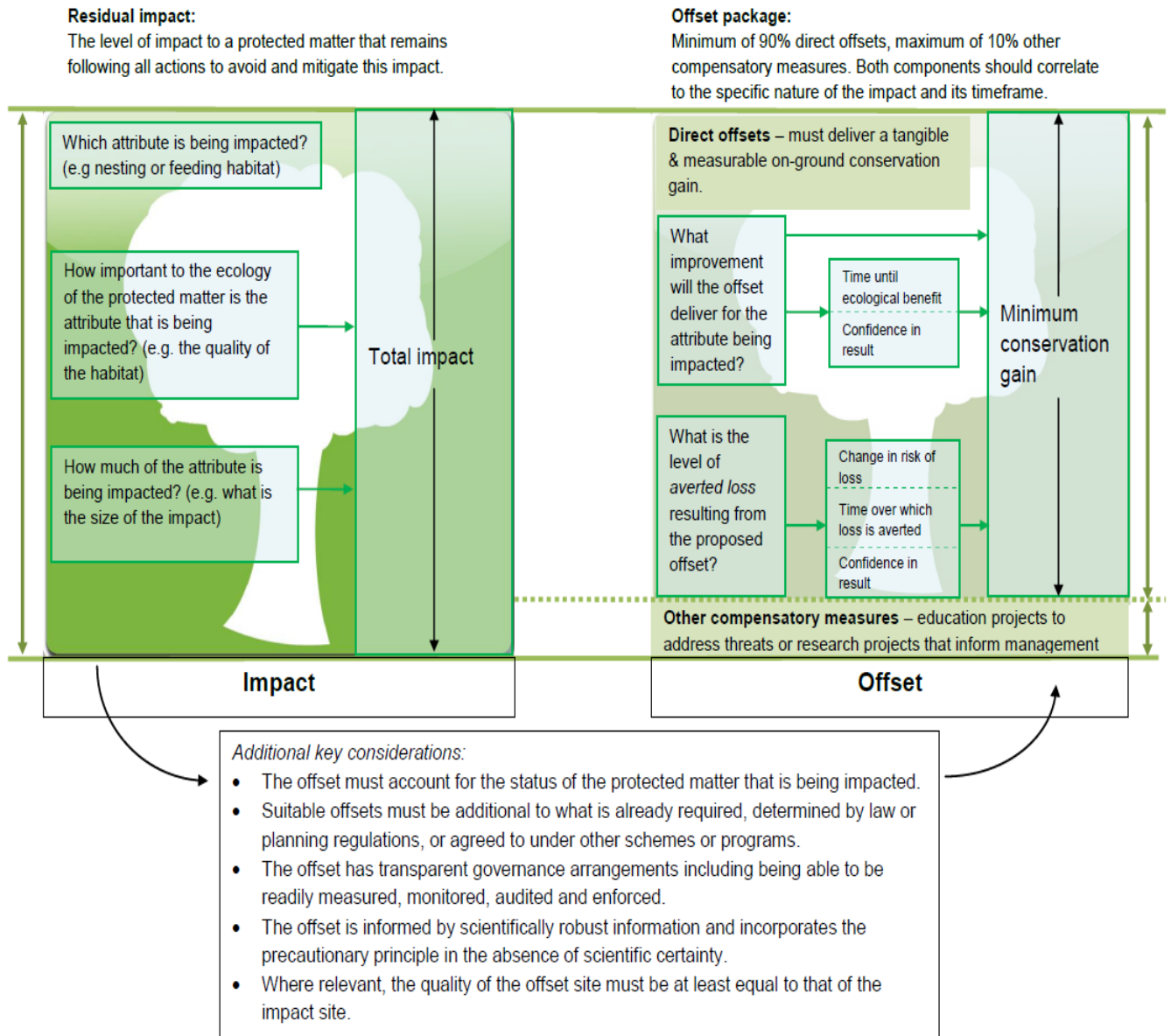


Figure 5.1 Determining suitable offsets under the EPBC Act (taken from (Department of Sustainability Environment Water Population and Communities 2012a)

Table 5.3 Assessment of offsets against principles in the EPBC Act environment offset policy

Principles of EPBC Act offsets	Assessment
Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action	The effective implementation of the Management Plan and protection mechanisms will overtime (20 years) assist natural ecological restoration. It is expected that Box Gum Woodland would improve with ongoing active management and monitoring of threats such as kangaroos, weeds and pests, with an increase in groundcover vegetation, increase in species diversity through natural and assisted regeneration processes, decrease in weed cover.
Be built around direct offsets but may include other compensatory measures	The offset is built around direct offset, with an onsite offset.
Be in proportion to the level of statutory protection that applies to the protected matter	Due to the higher risk involved with protected matters of greater conservation status, the offsets required for those protected matters with higher conservation status must be greater than those with a lower status. The offset provides like for like offsets and the required offset area has been calculated using the EPBC Act OAG that takes into consideration the statutory protection that applies.
Be of a size and scale proportionate to the residual impacts on the protected matter	The magnitude of the offset has been calculated using the EPBC Act OAG. The Preliminary Documentation noted that all identified impacts with the exception of direct clearing will be mitigated. Therefore, the project will result in 1.39 ha of impact to Box Gum Woodland, resulting in the offset area of 14 ha delivering 100.12% of the required offset, thereby meeting the 100% offset requirement.
Effectively account for and manage the risks of the offset not succeeding	Appropriate management actions for biodiversity within the offset site have been designed to maintain and enhance current condition of vegetation and habitats within the offset site. This is an adaptive management plan that includes monitoring and review of management measures to minimise risk of the offset not succeeding.
Be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs	<p>The OMP goes beyond current legal obligations by committing to consistent, long-term ecological management rather than the current ad hoc approach.</p> <p>Weed control is designed not just to meet <i>Biosecurity Act 2015</i> (Biosecurity Act) requirements but to actively improve understorey diversity and habitat quality through targeted actions and annual monitoring.</p> <p>Pest management, erosion control, and grazing exclusion measures are integrated to reduce degradation and support regeneration of Box Gum Woodland.</p> <p>Unlike current practices, the OMP introduces structured monitoring for vegetation, pests, and erosion – ensuring measurable conservation outcomes. These coordinated actions deliver ecological benefits that exceed statutory requirements and support the recovery of a Critically Endangered ecological community.</p>
Be efficient, effective, timely, transparent, scientifically robust and reasonable	Both the offset and impact areas are located within the broader KMA, with the offset situated within 200 m of the impact site. This proximity ensures that both areas share the same landscape connectivity values, based on patch size and mapping. The offset therefore provides an efficient and effective solution. As both areas are owned by the same proponent, implementation can occur in a timely manner. The assessment of both sites followed standard methodologies, ensuring transparency and scientific rigour. For these reasons, the offset is considered reasonable.

Principles of EPBC Act offsets	Assessment
<p>Have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.</p>	<p>To ensure transparent governance, the offset area will be subject to arrangements that allow it to be readily measured, monitored, audited, and enforced. While it is anticipated that the offset may need to be secured for a minimum of 20 years to meet conservation objectives and demonstrate that the risk of loss is averted, it is likely that the offset will be secured expiry of the EPBC approval on 31 December 2046. For assessment purposes, the EPBC Act OAG applies a maximum duration of 20 years. The mechanism for long-term legal security is yet to be finalised but will be designed to ensure enduring protection of the offset area, with enforceable provisions that remain in place over time.</p>

6 Offset management

6.1 Management aims

In accordance with the EPBC Act approval conditions, the approval holder is required to:

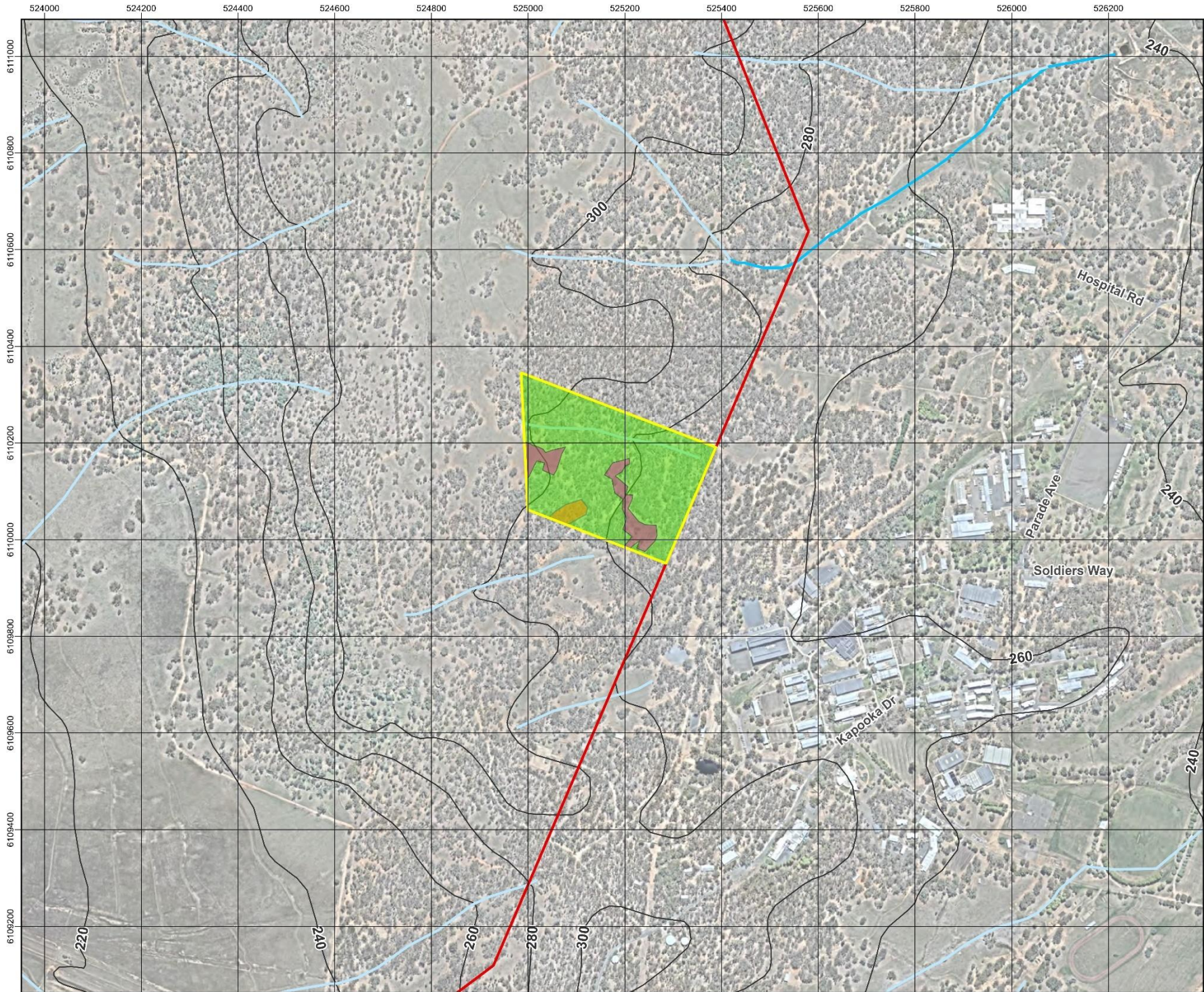
- achieve all conservation outcomes for the offset area as specified in the OMP
- undertake annual monitoring and reporting to DCCEE, as part of the compliance obligations outlined in approval (EPBC 2023/09649)
- conduct independent audits every five years (audit period identified in the conditions of approval) following the commencement of the action, to verify compliance with the OMP
- ensure independent audits are carried out by suitably qualified professionals, in accordance with the standards and requirements set out in the approval conditions.

These compliance measures are designed to support the overarching aim of the OMP to deliver a measurable conservation gain for the Box Gum Woodland ecological community. To achieve this, the OMP outlines targeted management actions that address key threats identified in the approved conservation advice. These threats – identified in the approved conservation advice – include overgrazing by kangaroos, weed invasion, pest species, and erosion (Section 4.4). By actively managing these threats, the plan seeks to improve the condition, resilience, and long-term viability of Box Gum Woodland communities within the offset area.

6.2 Management zones

The offset area contains vegetation of varying condition, structure, and ecological value, necessitating a differentiated management approach. To support effective ecological outcomes, the area has been divided into three distinct management zones. These zones reflect differences in vegetation quality and associated threats – some of which may be similar across zones but vary in intensity or impact. This zoning enables targeted management and monitoring strategies that are responsive to the specific needs of each area, ensuring alignment with the EPBC Act criteria for the Box Gum Woodland ecological community and supporting the long-term protection and enhancement of native biodiversity. The three management zones within the offset area are (Figure 6.1):

- **Management Zone 1 (MZ1) – Box Gum Woodland:** Contains mature tree canopy and understorey vegetation that meets the EPBC Act condition thresholds for the Box Gum Woodland ecological community. This zone represents the highest quality native vegetation within the offset area and will be managed to preserve and enhance its ecological integrity.
- **Management Zone 2 (MZ2) – Derived Native Grassland:** Includes grassland areas that lack native canopy and do not meet the minimum condition thresholds for the Box Gum Woodland TEC. This zone requires a tailored management and monitoring approach to support natural restoration.
- **Management Zone 3 (MZ3) – Box Gum Woodland (Pines):** Contains exotic pine trees and characterised by a high level of weed cover. Due to its degraded condition, this zone has been assigned a separate management classification and will require specific interventions to address invasive species and improve ecological value.



**PS131808-147
Blamey Barracks Kapooka
Redevelopment
(EPBC 2023/09649)**

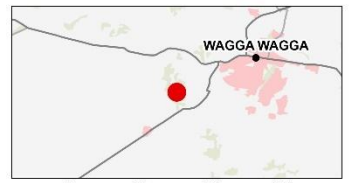
Figure 6.1
Management Zones

Legend

- Contour - 20 Metres
- Offset Area Boundary
- Range Danger Area
- Cadastre
- Strahler Stream Order**
- 1
- 2

Vegetation Zone

- MZ3 – Box Gum Woodland with Pine (0.30058 ha)
- MZ2 - Derived Native Grassland (1.12691 ha)
- MZ1 – Box Gum Woodland (11.60115 ha)



Coordinate system: GDA2020 MGA Zone 55
Scale ratio correct when printed at A3

1:7,500 Date: 23/10/2025

Data sources: Metromap Services, NSW Government, Geoscience Australia

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6.3 Offset management approach

The offset area is located within the RDA and adjoins the weapons range. Firearm shooting activities are conducted within this area and may pose risks to people and property. Therefore, access to the area is highly restricted – both vehicular and pedestrian – and prohibits any form of development due to significant safety concerns. Land management activities within the RDA can only be undertaken when the range is not in use.

Several approaches to offset management were considered to enhance the condition of Box Gum Woodland within the RDA. Due to restricted access constraints, proposed management were developed in consultation with Defence during the preparation of the OMP to ensure their feasibility. The objective is to achieve the highest possible conservation gain while acknowledging practical limitations. The selected management strategy focuses on threat mitigation, including the installation of an exclusion fence (Table 6.2) and ongoing monitoring within the designated offset area. The additional actions considered and associated limitations or constraints identified are outlined in Table 6.1.

Table 6.1 Management considered during preparation of OMP

Actions considered	Limitations and constraints
Fire management/cool burns to promote regeneration in degraded areas (i.e. grassland) and encourage native vegetation composition for Box Gum Woodland	Identified limitations/constraints to this approach included: <ul style="list-style-type: none"> — limitations in site access during appropriate seasonal windows to enable safe and appropriate fire management and, — additional costs of management.
Plantings in grassland areas adjacent to Box Gum Woodland patches	Identified limitations/constraints to this approach included: <ul style="list-style-type: none"> — limitations in site access to enable planting during appropriate season — limitations in site access to enable ongoing management of plantings — costs of management (including costs of site preparation, seedlings, potential replacement planting and ongoing maintenance) — potential impact of grazing on plantings, if not managed or fenced.
Additional assisted regeneration techniques for woodland and grassland areas including use of coarse woody debris and/or native mulch to increase soil biota, scalping and sowing seeds.	Identified limitations/constraints to this approach included: <ul style="list-style-type: none"> — limitations in site access to enable assisted regeneration techniques and maintenance — costs of management (i.e. seeds, labour costs and machinery for scalping).

6.4 Management actions

Management actions have been developed to address the key threats to Box Gum Woodland as identified in EPBC Act statutory documents. These actions were carefully selected to reflect the ecological characteristics of each management zone while considering site-specific limitations, including restricted access and safety constraints within the RDA. The strategy aims to mitigate pressures such as overgrazing, weed invasion, pest species, and erosion, and to support the recovery and resilience of Box Gum Woodland. By targeting priority threats within feasible operational boundaries, the actions are designed to deliver the best possible conservation gain for the community and offset the loss of 1.39 ha of Box Gum Woodland.

In line with the EPBC Act Environmental Offsets Policy, these management actions are intended to improve the habitat quality of the offset site to meet or exceed the habitat quality score of the impacted area, which was determined to be 9. This improvement is expected to be achieved within 15 years, reflecting the anticipated timeframe for Eucalyptus species to reach early maturity under typical conditions, and allowing for seasonal variability and the known effectiveness of weed and pest control measures. Ongoing maintenance and management of the offset site will continue for 20 years, in accordance with the requirements outlined EPBC Act OAG.

The responsibility for the offset management requirement lies with the Defence, as the approval holder for Component 3 of the BBK Project. Under the EPBC Act approval granted on 6 December 2024, the Department is required to satisfy several conditions before the project can commence. One such condition is obtaining the Minister's approval of an OMP to compensate for the clearing of 1.39 ha of Box Gum Woodland.

The commitments outlined in this plan form the basis of the management actions, which are detailed in Table 6.2. This table presents the proposed actions, associated management objectives and obligations, timing and frequency of implementation, specific management measures, and assigned responsibilities. Monitoring, performance indicators, and corrective actions related to these management actions are provided in Section 7.

Defence will fund the implementation of the management and monitoring actions outlined in this plan up to Completion of the BBK redevelopment project. Following Completion, responsibility for funding and ongoing management of the offset site will transition to the Directorate of Estate and Land Management (DELM) for the remainder of the 20-year management period

Table 6.2 Management actions and measures to be applied to the offset area

Proposed action	Management objectives and obligations	Timing and frequency	Management measures			Responsibility
			MZ1 – Box Gum Woodland	MZ2 – Derived Native Grassland	MZ3 – Box Gum Woodland (Pines)	
1. Site preparation (offset protection and ground disturbance)	Establish boundary of offset area expiry of the EPBC approval on 31 December 2046. Establish and maintain safe and stable access to facilitate management and monitoring	At the commencement of offset establishment. Annual maintenance inspections of site protection measures.	Management measures for site preparation and offset protection, include: <ul style="list-style-type: none"> — establish fencing at the boundary of offset area to protect Box Gum Woodland from disturbance and delineate the area as prohibited land for all personnel with potential to access this area — ensure existing access tracks are in reasonable condition (i.e. provide reliable access for light to medium vehicles and equipment while minimising disturbance to native vegetation, soil and fauna) and site access is suitable for management — install signage at visible locations and at access points to identify site as an offset area to deter trespassers. 			Defence nominated personnel responsible for offset management
	Ensure safe execution of ground disturbance activities and compliance with Defence Unexploded Ordnance (UXO) protocol	Prior to and during any intrusive works	<ul style="list-style-type: none"> — UXO will be managed as unexpected finds in accordance with Section D.4.7 and Appendix H of the BBK EMP — All works will comply with the Defence Unexploded Ordnance Management Manual (2022) https://uxo.defence.gov.au — Safe Work Method Statement will include UXO risk and emergency response procedures — UXO awareness training will be provided during site induction — Any UXO finds will be reported and managed under the Unexpected Finds Protocol 			Defence nominated personnel responsible for offset management
2. Weed control	Control invasive weed species to reduce spread and further invasion and degradation of habitat in offset area.	At the commencement of offset establishment, then annually and/or in response to monitoring.	To prevent the spread of invasive species and pathogens the following measures will be implemented in all management zones: <ul style="list-style-type: none"> — Undertake mapping of weeds recorded during baseline surveys prior to implementing weed control to inform targeted treatment and monitoring. — Access to the offset area will follow the Australian Governments Arrive Clean, Leave Clean Guidelines (Department of the Environment 2015). All vehicles will remain on existing tracks. 			Defence nominated personnel responsible for offset management

Proposed action	Management objectives and obligations	Timing and frequency	Management measures			Responsibility
			MZ1 – Box Gum Woodland	MZ2 – Derived Native Grassland	MZ3 – Box Gum Woodland (Pines)	
		The timing of weed management is dependent on the targeted weed species and access requirements.	<ul style="list-style-type: none"> — A detailed weed management plan will be developed prior to commencement of the offset by a qualified weed controller (as defined by the Local Government Authority or Environment Protection Agency requirements) and include: <ul style="list-style-type: none"> — Identification and prioritisation of target species including Priority Weeds, High Threat Weeds, and Weeds of National Significance (WoNS). — Control methods aligned with industry best practice and compliant with the Biosecurity Act. — Adaptive management to refine control strategies based on monitoring outcomes. — Weed management approach that will focus on invasive species including: <ul style="list-style-type: none"> — Priority and/or High Threat weeds under the NSW Biosecurity Act, Wagga Wagga City Council’s Biosecurity Weed Policy, and the NSW Biodiversity Assessment Method (BAM). Key target species include <i>Pinus spp.</i>, <i>Hypericum perforatum</i>, <i>Carthamus lanatus</i>, and <i>Lycium ferocissimum</i>, which were observed within the offset area and are known to degrade the structure and function of Box Gum Woodland by suppressing native regeneration, altering soil conditions, and competing with native flora. — General suppression of other weed species will be managed through broader control methods (e.g. slashing, spot spraying) and monitored to prevent escalation. — Rapid response to controlling new outbreaks of Priority and High Threat weeds will be undertaken when they are identified. — Herbicide applications must be undertaken by contractors who are trained and accredited under a nationally accredited program, such as Chemcert. — Control methods will be targeted to ensure effective outcomes and minimise off-target impacts. The specific methodology will be determined by the qualified weed controller in accordance with relevant legislation and best practice guidelines. 			

Proposed action	Management objectives and obligations	Timing and frequency	Management measures			Responsibility
			MZ1 – Box Gum Woodland	MZ2 – Derived Native Grassland	MZ3 – Box Gum Woodland (Pines)	
	Implement targeted weed control measures that are tailored to the specific ecological conditions and threat levels of each management zone.	At the commencement of offset establishment, then annually based on the management zone requirements and/or in response to monitoring.	<p>Undertake targeted weed management once a year. To minimise impacts of herbicide on native vegetation, weed control will be undertaken in accordance with the guidelines for target species.</p> <p>Weed management timing and techniques will be refined based on monitoring and trigger thresholds (Sections 7.1 and 7.3)</p>	<p>Given the level of weeds infestation, weed management will be undertake twice within the first year (once in Autumn and once in Spring/Summer). Then adapted based on monitoring and trigger thresholds (Sections 7.1 and 7.3).</p>	<p>Management will focus on the removal of the pines to prevent numbers increasing. This can be undertaken by using the cut and paint method cutting the tree to the stump and immediately painting with herbicide. Or stem injection.</p> <p>General weed management will also be undertaken twice within the first year (once in Autumn and once in Spring/Summer). Then adaptive based on monitoring and trigger thresholds (Sections 7.1 and 7.3)</p>	Defence nominated personnel responsible for offset management

Proposed action	Management objectives and obligations	Timing and frequency	Management measures			Responsibility
			MZ1 – Box Gum Woodland	MZ2 – Derived Native Grassland	MZ3 – Box Gum Woodland (Pines)	
3. Pest animal	Minimise vegetation degradation to Box Gum Woodland community from feral species and minimise risk of predation to associated native fauna	Annually and/or in response to monitoring identifying a need for further pest animal control.	<p>Following baseline monitoring assessments, a targeted pest animal management program will be developed for the offset site. This program will focus on pest species identified during initial surveys or through evidence of recent site use (e.g. scats, tracks, burrows). Species observed during the surveys included rabbits (<i>Oryctolagus cuniculus</i>) and foxes (<i>Vulpes vulpes</i>), which were observed in moderate to high numbers and across multiple areas of the offset site, indicating widespread distribution and the potential for significant ecological impact.</p> <p>Baseline monitoring will be essential to confirm the extent of these populations and to identify specific areas for targeted control, such as active rabbit warrens. Baseline monitoring must be conducted by a qualified ecologist or an environmental professional with equivalent experience.</p> <p>Key considerations for the development and implementation of the pest animal management program include:</p> <ul style="list-style-type: none"> — Targeting Species Present in High Numbers: Control efforts will prioritise pest species occurring in high numbers, as determined through monitoring data. — Best Practice and Compliance: Pest species management will be formed in line with industry best practice for target species and completed in accordance with the Biosecurity Act. — Humane Control: All pest control activities will be undertaken in a humane manner, informed by site-specific monitoring data. — Adaptive Management: The pest control program will be developed and refined using an adaptive management approach, allowing for adjustments based on monitoring outcomes and effectiveness of control measures. <p>Potential management measures include:</p> <p>Rabbits:</p> <ul style="list-style-type: none"> — Mapping and assessment of active warrens. — Warren ripping or fumigation in targeted areas. 			Defence nominated personnel responsible for offset management Pest animal control contractor

Proposed action	Management objectives and obligations	Timing and frequency	Management measures			Responsibility
			MZ1 – Box Gum Woodland	MZ2 – Derived Native Grassland	MZ3 – Box Gum Woodland (Pines)	
			<ul style="list-style-type: none"> — Baiting programs (e.g. Pindone or 1080) in accordance with regulatory requirements. — Post-control monitoring to assess vegetation recovery and effectiveness. <p>Foxes:</p> <ul style="list-style-type: none"> — Use of soft-jaw traps or bait stations (e.g. 1080 baiting) in strategic locations. — Spotlight surveys to monitor population trends. <p>Exclusion Fencing: A recommended exclusion fence is proposed for the offset area, while primarily designed to deter kangaroo access, the fence will also contribute to broader ecological outcomes by limiting access by pest species such as foxes and rabbits. To achieve these goals, the fence will incorporate one or more features that enhance its effectiveness against multiple species. Specific design features will be determined using the baseline monitoring and in consultation with pest species officers, taking into account site-specific conditions and observed pest activity.</p> <p>Examples of potential design features include:</p> <ul style="list-style-type: none"> — Prefabricated wire mesh with progressive spacing can deter kangaroo entry while also restricting smaller pest species. — A minimum height of 1.8 m helps prevent kangaroo access. — A 30 cm integrated folded or buried apron can reduce digging and tunnelling by rabbits. <p>In areas of high fox activity, additional deterrents such as floppy tops will be considered and implemented where monitoring indicates they are required to prevent climbing.</p> <p>These features are intended to protect regenerating vegetation and reduce pest-related impacts. Fence performance will be monitored and adapted as required to ensure long-term effectiveness in achieving these outcomes.</p>			

Proposed action	Management objectives and obligations	Timing and frequency	Management measures			Responsibility
			MZ1 – Box Gum Woodland	MZ2 – Derived Native Grassland	MZ3 – Box Gum Woodland (Pines)	
4. Grazing	Manage biomass accumulation to support the natural restoration of the Box Gum Woodland.	At the commencement of offset establishment. In response to annual monitoring.	<p>To reduce grazing pressure and support vegetation recovery within the offset area, kangaroo exclusion fencing will be installed in accordance with industry standards. For example, a typical design may include prefabricated wire mesh with progressive spacing, a minimum height of 1.8 m to deter jumping, and a 30 cm integrated folded or buried apron to prevent digging. This will limit kangaroo access and help maintain biomass within ecological thresholds. Double gates will be installed on either side of the offset area to enable controlled kangaroo access when required. This measure supports adaptive management by allowing targeted grazing to reduce biomass when monitoring indicates thresholds have been exceeded. Opening or closing the gates will assist in managing grazing and maintaining, to ensure it is not overgrazed or reduced below acceptable biomass thresholds.</p> <p>Fence performance will be monitored regularly and adapted as required, in line with an adaptive management approach to ensure long-term effectiveness.</p> <p>If monitoring indicates that kangaroo densities remain high despite fencing and controlled access, and grazing pressure continues to impact vegetation condition or biomass thresholds, population management, such as culling, will be considered.</p> <p>Any action will be:</p> <ul style="list-style-type: none"> — Based on monitoring data and ecological thresholds (e.g. understory cover, biomass levels). — Undertaken by licensed professionals with appropriate training and accreditation. — Subject to approval via a Licence to Harm Kangaroos issued by NPWS. — Monitored and reviewed to ensure animal welfare and ecological outcomes are maintained. <p>All measures will align with the Kapooka Defence Site Landscape Management Plan, relevant NSW legislation, and humane animal welfare standards.</p>			Defence nominated personnel responsible for offset management

Proposed action	Management objectives and obligations	Timing and frequency	Management measures			Responsibility
			MZ1 – Box Gum Woodland	MZ2 – Derived Native Grassland	MZ3 – Box Gum Woodland (Pines)	
			<p>If monitoring indicates that the biomass within the offset area has exceed the trigger threshold (Table 7.7) One or more of the following management actions will be undertaken:</p> <ul style="list-style-type: none"> — Opening the gates and allowing kangaroos grazing. This will need to be monitored so that grazing pressure does not reduce the biomass below the thresholds. — Slashing or mowing to reduce biomass using machinery or by hand. Slashing by machine is not recommended in MZ1 or areas where natives species are likely to be damaged. Cut plant material such as grasses and weeds will be collected and removed from the offset area to prevent nutrient build-up and weed spread. Disposal will be done responsibly, such as by composting off-site or taking material to an approved green waste facility. Slashing or mowing is to be undertaken before the flowering and seed set. <p>If monitoring identifies understory cover is below baseline, consider adaptive management of the area including need for additional pest control (e.g. installation of extra bait stations) and/or potential for planting. Additional pest control will include measures such as bait station installation and/or targeted trapping, specific methodology would be determined based on monitoring results and advice from a qualified pest controller.</p>			

Proposed action	Management objectives and obligations	Timing and frequency	Management measures			Responsibility
			MZ1 – Box Gum Woodland	MZ2 – Derived Native Grassland	MZ3 – Box Gum Woodland (Pines)	
5. Soil Erosion	Manage and mitigate soil erosion to minimise impacts to the offset area	<p>Prior to contamination remediation works and/or disturbance to the soil.</p> <p>Construction of fencing</p> <p>Annually (as weather permits) and/or in response to monitoring.</p>	<p>General erosion control measures will be implemented consistently across all management zones to stabilise soil, reduce runoff, and support the ecological condition of the offset site. These measures include:</p> <ul style="list-style-type: none"> — trapping sediment flows through sediment barriers including fencing, coir logs, sediment matting, weed-free straw, locally sourced native mulch, or polymer coatings — installation of sediment barriers (e.g. coir logs, silt fencing) on slopes and drainage lines. Erosion control materials will preferentially comprise of natural fibre products (e.g. jute, hemp) instead of plastic-based geofabrics or netting. This aligns with interim guidance in <i>Microplastics – Quick Guide</i> (DCARM, June 2025), which highlights risks of plastic degradation and microplastic contamination in soil. Where plastic materials are used, they will need to be maintained and checked regularly in accordance with the Environmental Management Plan to minimise plastics entering the soil and water. — use of mulch or organic ground cover to reduce raindrop impact and retain soil moisture — strategic placement of logs, fallen branches or rocks to slow water flow and trap sediment, seeds and other biological debris — avoidance of soil disturbance during wet conditions — monitoring of erosion-prone areas following rainfall events — where fencing is proposed in contoured areas with significant elevation change (e.g. ~30 m fall), erosion control measures will be tailored to slope conditions. This includes installation of contour-aligned sediment barriers, stabilisation of fence lines, and runoff management to prevent downslope soil loss. <p>Areas identified as soil erosion hazards during baseline monitoring must be remediated. Remediation measures will be implemented as soon as condition allow and will be tailored to site-specific landform characteristics erosion severity and scale. Stabilisation measures will be adapted over time based on monitoring outcomes to ensure erosion is effectively controlled.</p>			<p>Defence nominated personnel responsible for offset management</p> <p>Earthmoving contractor</p>

Proposed action	Management objectives and obligations	Timing and frequency	Management measures			Responsibility
			MZ1 – Box Gum Woodland	MZ2 – Derived Native Grassland	MZ3 – Box Gum Woodland (Pines)	
	Implement targeted erosion control measures tailored to the specific ecological conditions and threat levels of each management zone.	At the commencement of offset establishment. Annual maintenance and/or in response to monitoring.	<ul style="list-style-type: none"> — Maintain existing ground cover through minimal disturbance and exclusion of grazing. — Use of woody debris or brush barriers to slow runoff on gentle slopes. — Retain leaf litter and fallen timber to protect soil and support microhabitats. — Monitor for gully formation and stabilise early using low-impact techniques. 	<ul style="list-style-type: none"> — Use of erosion control blankets or jute matting on bare or compacted patches. — Installation of diversion banks or swales to redirect surface water and reduce erosion risk. — Soil surface roughening to increase infiltration and reduce runoff velocity. 	<ul style="list-style-type: none"> — Soil stabilisation following weed control using mulch and organic debris. — Use of bioengineering techniques (e.g. live staking, brush layering) on steep or eroded slopes. — Surface roughening to reduce runoff velocity and promote infiltration. 	Defence nominated personnel responsible for offset management
6. Bushfire risk management	Minimise risk of bushfire ignition and spread within the offset area. Protect regenerating vegetation and maintain ecological values of Box Gum Woodland.	Annual inspection prior to fire season (September–October). Post-fire event assessment if applicable.	<ul style="list-style-type: none"> — Maintain low fuel loads through biomass monitoring and adaptive grazing/slashing. Liaise with Defence fire management teams to ensure firebreaks are maintained. 	<ul style="list-style-type: none"> — Monitor biomass accumulation and assess need for slashing or strategic grazing. Avoid activities that increase fire risk (e.g. dumping, unmanaged access) 	<ul style="list-style-type: none"> — Remove pine debris and maintain clear zones around pine infestations. Monitor for flammable weed species. 	Defence nominated personnel responsible for offset management. Liaison with Defence fire safety officers.

6.5 Ecological outcomes

The ecological outcome of this offset is to naturally restore, improve, and expand the extent of EPBC Act listed Box Gum Woodland within the designated offset area, ensuring its long-term viability. Restoration will be achieved solely through natural regeneration, supported by targeted management actions that reduce threats and promote ecological recovery.

Management will focus on:

- reducing pressures such as weed invasion, erosion, and excessive biomass accumulation
- supporting the natural regeneration of native species to uplift areas that currently do not meet EPBC Act listing criteria
- increasing the overall extent and condition of Box Gum Woodland to achieve a habitat quality score of 9
- enhancing habitat values to support native fauna, including EPBC Act-listed threatened species.

The offset will be managed and protected for the duration of the agreement and beyond, ensuring the sustained ecological function, resilience, and habitat value of the Box Gum Woodland community. Monitoring and adaptive management will be used to track ecological progress in order to achieve the ecological outcome through natural processes.

6.6 Potential risks to offset area

6.6.1 Risk analysis

This OMP has evaluated the risks that can potentially inhibit achieving the set targets, objectives, and outcomes for the offsets, including risks that may be beyond the approval holder’s control. The risks have been assessed against the Risk Matrix presented in Table 6.4, which is of the type endorsed and accepted by government regulators.

The risk analysis presented herein:

- identifies events and threats that will, may, or are likely to impact the attainment of set targets, objectives and outcomes and completion criteria for the offset
- assesses the likelihood and consequences of those events and threats eventuating, both before and after risk controls are applied, and assesses residual risk levels
- identifies levels of uncertainty in mitigating the risks, with appropriate performance criteria and trigger thresholds for corrective actions should risks and threats eventuate. The performance criteria, trigger thresholds and corrective actions are provided by this OMP.

The likelihood and consequence of an event occurring detrimental to the offsets before and after management activities are applied, is presented in Table 6.3.

Table 6.3 The likelihood and consequence of an event occurring detrimental to the offsets before and after management activities are applied

Likelihood – Qualitative measure of likelihood that an event/circumstance will occur both before and after management activities are implemented	
Highly likely	Expected to occur in most circumstances
Likely	Will probably occur during the life of the project
Possible	Might occur during the life of the project
Unlikely	Could occur but considered unlikely or doubtful
Rare	May occur in exceptional circumstances

Consequence: Qualitative measure of the consequence/result if the issue does occur	
Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage (e.g. strategy objectives are unable to be achieved, with no evidenced mitigation strategies)
Major	Major loss of environmental amenity and real danger of continuing (e.g. strategy objectives are unlikely to be achieved, with significant legislative, technical, ecological and/or administrative barriers to attainment that have no evidenced mitigation strategies)
High	Substantial instances of environmental damage that could be reversed with intensive efforts (e.g. medium-long term delays to achieving objectives, implementing uncertain, high-cost/effort corrective actions)
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts (e.g. short-term delays to achieving strategy objectives, implementing well-characterised, high cost/effort corrective actions)
Minor	Minor incident of environmental damage that can be reversed (e.g. short-term delays to achieving strategy objectives, implementing low-cost, well-characterised corrective actions)

The level of risk relating the likelihood and consequence of an event detrimental to the offsets occurring before and after management activities are applied, is presented in Table 6.4.

Table 6.4 Risk matrix

Final risk rating: a function of multiplying Likelihood and Consequence					
Likelihood	Consequence				
	Minor	Moderate	High	Major	Critical
Highly likely	Medium	High	High	Severe	Severe
Likely	Low	Medium	High	High	Severe
Possible	Low	Medium	Medium	High	Severe
Unlikely	Low	Low	Medium	High	High
Rare	Low	Low	Low	Medium	High

6.6.2 Risk management of threatening processes

The EPBC Acts approved conservation advice (Commonwealth Department of Climate Change Energy the Environment and Water 2023) states that offset areas for Box Gum Woodland should be managed and protected in perpetuity within land dedicated for conservation. The advice recommends avoiding risks that may reduce the size, condition, or ecological function of the community over time. Where restoration or management is proposed as an offset, it also advises that responsible parties support ecological remediation in the event of underperformance to ensure the offset area is sustained or improved.

In line with this guidance, the following section identifies potential threatening processes that may affect the successful delivery of the offset, informed by the key threatening processes outlined in approve conservation advice (Commonwealth Department of Climate Change Energy the Environment and Water 2023). To mitigate these risks, management actions will be applied in response to identified trigger thresholds, with remediation measures implemented as needed.

Table 6.5 outlines the threatening processes, their likelihood, and the corresponding management responses required to address adverse impacts. Clear performance targets will guide contractors in managing risks and achieving the offset objectives, as demonstrated through on-ground monitoring and management.

6.6.3 *Interrupted implementation risk*

The ecological success of the offset area is dependent on the consistent application of management actions throughout the duration of the EPBC Act approval, which expires on 31 December 2046. If management actions are not implemented in consecutive years, the offset area is at risk of ecological decline due to the resurgence of key threatening processes.

Interruptions in weed control may allow invasive species to re-establish and spread, undermining native species recruitment and increasing competition. Gaps in pest animal control can lead to elevated grazing pressure and soil disturbance, particularly from rabbits and kangaroos, which suppress understorey regeneration and reduce biomass. Erosion control measures also require ongoing maintenance to prevent soil degradation and loss of groundcover.

These cumulative impacts may delay or prevent the offset area from achieving the required habitat quality score of 9 and meeting completion criteria milestones. To mitigate this risk, continuity of management actions must be maintained. Where interruptions occur, immediate corrective measures must be triggered, supported by the adaptive management framework outlined in Section 7.1 and Table 7.1. Management actions will be adjusted based on monitoring outcomes to ensure ecological objectives remain on track.

Table 6.5 Threatening processes and risk management

Threatening process	Risk	Performance indicators	Trigger thresholds	Corrective actions	Residual risk following corrective action and management
Increased presence and/or invasion of High Threat weeds (as listed under the NSW BAM and/or WoNS)	Likelihood: Likely Consequence: High Risk: High	No instances of new species of High Threat weeds and WoNS identified during annual monitoring. Decrease in existing weed populations during annual monitoring in line with completion criteria milestones. No new infestations of High Threat weeds and WoNS identified during annual monitoring.	Performance indicators and completion criteria (Section 7.3.1) are not met during annual weed monitoring at the end of 5 years of monitoring.	Investigate cause of increased weed populations. Review weed control measures, to evaluate effectiveness and revise the measures accordingly. Increase intensity and frequency of weed control measures.	Likelihood: Possible Consequence: Minor Risk: Low
Increased presence of pest fauna and vegetation damage and/or native animal predation as a result of pest fauna	Likelihood: Likely Consequence: High Risk: High	Reduction in evidence of pest species (no new damage to vegetation and/or pest species scats) identified during annual monitoring within offset area in line with completion criteria milestones.	Performance indicators and completion criteria (Section 7.3.1) are not met during annual pest fauna monitoring at the end of 5 years of monitoring.	Investigate cause of increased pest animal populations. Review pest animal control measures to evaluate effectiveness and revise measures accordingly. Increase intensity and frequency of pest animal control measures.	Likelihood: Possible Consequence: Minor Risk: Low

Threatening process	Risk	Performance indicators	Trigger thresholds	Corrective actions	Residual risk following corrective action and management
Increased grazing on native vegetation leading to decreased biomass, lack of native plant regeneration and decreased soil stability.	Likelihood: Likely Consequence: High Risk: High	Increase in biomass of grassy and herbaceous species identified during vegetation monitoring assessments in line with completion criteria milestones. Increase in understory diversity for all management zones and increase in projected foliage cover for understory native grass and forb species in line with completion criteria milestones.	Performance indicators and completion criteria (Section 7.3.1) are not met during annual vegetation monitoring (decrease in structure and composition scores for any management zone) after 5 years of monitoring.	Review pest animal control measures to evaluate effectiveness and revise measures accordingly. Assess effectiveness of grazing exclusion fencing and provide repairs and adjustments where necessary. Assess potential for additional management measures (assisted regeneration techniques) to assist understory recruitment in relevant management zones. Review erosion controls if necessary.	Likelihood: Possible Consequence: Minor Risk: Low
Biomass increases to a level that thatching prohibits natural regeneration.	Likelihood: Possible Consequence: Moderate Risk: Medium	Increase of dry, dead plant material in the ground layer from accumulated native grass and herbaceous biomass cover. Or, due to reduced grazing pressure, an increase in ground storey weeds (particularly annual grasses) leading to an increase in biomass inhibiting natural regeneration.	Performance indicators and completion criteria (Section 7.3.1) are not met during annual vegetation or weed monitoring and there is an increase in dead or dry plant material after 5 years of monitoring.	Determine management options such as slashing, mowing or opening up the exclusion fencing for a set period of time. Management options will consider the management zones, and seasonal timing.	Likelihood: Unlikely Consequence: Low Risk: Low

Threatening process	Risk	Performance indicators	Trigger thresholds		Corrective actions	Residual risk following corrective action and management
Entrapment or injury of wildlife due to exclusion fencing	Likelihood: Possible Consequence: Moderate Risk: Medium	No recorded incidents of wildlife injury or death due to fencing. Fence integrity maintained. Wildlife movement not significantly disrupted	Any recorded incident of wildlife injury, entrapment, or death associated with fencing. Evidence of disrupted wildlife movement (e.g. repeated fence breaches, animal tracks along fence lines).	Implement rapid response protocol (Appendix F) for wildlife entrapment) Modify fence design (e.g. add visibility markers, adjust mesh size) Increase frequency of fence inspections Engage wildlife experts (e.g. RSPCA) for design review	Likelihood: Possible Consequence: Minor Risk: Low	

Threatening process	Risk	Performance indicators	Trigger thresholds	Corrective actions	Residual risk following corrective action and management
Increased erosion	<p>Likelihood: Possible</p> <p>Consequence: Moderate</p> <p>Risk: Medium</p>	<p>No additional evidence of erosion identified during monitoring.</p> <p>No increase in areas of existing erosion identified during monitoring.</p> <p>Evident recovery of previously eroded areas in line with completion criteria milestones.</p>	<p>Performance indicators and completion criteria (Section 7.3.1) are not met during annual erosion monitoring after 5 years of monitoring.</p>	<p>Investigate cause of increased erosion and/or soil disturbances.</p> <p>Review erosion control measures to evaluate effectiveness and revise measures accordingly.</p> <p>Increase extent of erosion control measures and/or review alternative measures as appropriate.</p>	<p>Likelihood: Unlikely</p> <p>Consequence: Low</p> <p>Risk: Low</p>
Encountering UXO or Explosive) during construction or offset management activities	<p>Likelihood: Possible</p> <p>Consequence: High</p> <p>Risk: Medium</p>	<p>No UXO encountered during works.</p> <p>Unexpected finds protocol implemented effectively.</p> <p>Personnel trained in UXO awareness.</p>	<p>Discovery of suspected UXO or EO waste.</p> <p>Failure to follow unexpected finds protocol.</p> <p>Untrained personnel entering high-risk areas</p>	<p>Cease work immediately.</p> <p>Implement “unexpected finds” protocol as per Section D.4.7 of the BBK EMP and Appendix H.</p> <p>Notify Defence and follow procedures outlined in the Defence Unexploded Ordnance Management Manual (2022).</p> <p>Engage qualified UXO specialists if required.</p>	<p>Likelihood: Unlikely</p> <p>Consequence: Moderate</p> <p>Risk: Low</p>

Threatening process	Risk	Performance indicators	Trigger thresholds	Corrective actions	Residual risk following corrective action and management
Bushfire ignition or spread resulting in damage to Box Gum Woodland or offset infrastructure	Likelihood: Possible Consequence: High Risk: Medium	No fire events recorded within offset area. Vegetation condition maintained or improving. Fuel loads within acceptable thresholds.	Evidence of fire damage to vegetation or infrastructure. Excessive biomass accumulation identified during monitoring. Failure to maintain firebreaks or access tracks.	Implement fuel load reduction measures (e.g. slashing, strategic grazing). Review and maintain firebreaks. Liaise with Defence fire management teams. Update fire response protocols and signage.	Likelihood: Unlikely Consequence: Moderate Risk: Low

7 Offset monitoring

The monitoring program aims to measure performance within the project timeframes to track Box Gum Woodland management in the offset area. The management actions are designed to reflect best practice, track the effectiveness and success of risk management measures and record the progression of the monitoring program over time.

As outlined in the EPBC Act approval conditions the reporting and review mechanisms aim to provide compliance and non-compliance reporting structure which is covered in Section 8.

7.1 Monitoring actions

The monitoring program has been designed to complement and evaluate the effectiveness of the management actions outlined in this plan. Both the monitoring and management frameworks have been developed in accordance with the **S.M.A.R.T. principles**, ensuring a structured and outcome-focused approach to offset delivery.

- **Specific:** Monitoring activities are targeted to assess the ecological threats addressed by the management actions, including weed invasion, pest species, erosion, and overgrazing. Monitoring methods are tailored to the ecological characteristics and operational constraints of each management zone.
- **Measurable:** The program incorporates quantifiable indicators such as vegetation integrity scores, species richness, foliage cover, pest activity, and erosion extent. These metrics provide a robust basis for tracking ecological change and assessing progress toward completion criteria and offset obligations.
- **Achievable:** Monitoring schedules and performance targets have been developed to be feasible within the site's operational context, including access limitations and safety requirements. The program is structured to support consistent implementation over the 20-year management timeframe.
- **Relevant:** Monitoring activities are aligned with EPBC Act statutory requirements and informed by conservation advices, recovery plans, and threat abatement plans. Data collected will directly inform the effectiveness of management actions and guide adaptive responses.
- **Time-bound:** Monitoring is scheduled at defined intervals – annually, every three years, and every five years – depending on the activity and stage of implementation. Completion criteria milestones are set across 5-, 10-, 15-, and 20-year horizons to ensure timely evaluation and intervention where needed.

This integrated approach ensures that management actions are not only scientifically robust but also responsive to changing site conditions. The use of adaptive management – through the **Plan–Implement–Monitor–Evaluate** cycle – enables continuous improvement and supports the long-term conservation of the Box Gum Woodland ecological community.

7.1.1 Photo point monitoring

Photo point monitoring will be applied during annual monitoring assessments for the purpose of tracking improvements and changes in the Box Gum Woodland for the duration of the management commitment. The procedure for photo point monitoring is presented in Table 7.1. Photo point monitoring will be combined with other monitoring methods and aim to assess the condition of the vegetation and threats within the offset area over time, as well as to track changes in the health of the community and identify any new or emerging threats (i.e. additional weeds, pests or pathogens such as *Phytophthora cinnamomi*) which are known to impact the community.

7.1.2 Vegetation surveys

Vegetation surveys will be undertaken through use of vegetation integrity plot and transect surveys, grass height assessments and weed monitoring surveys using the methodologies below. A summary of the vegetation monitoring is presented in Table 7.1.

7.1.2.1 Vegetation integrity surveys

Vegetation plots

Vegetation integrity plot surveys would be undertaken in accordance with the methodology outline in NSW BAM 2020 (Department of Planning Industry and Environment 2020). A schematic diagram illustrating the layout of each vegetation integrity plot is provided in Figure 7.1, below.

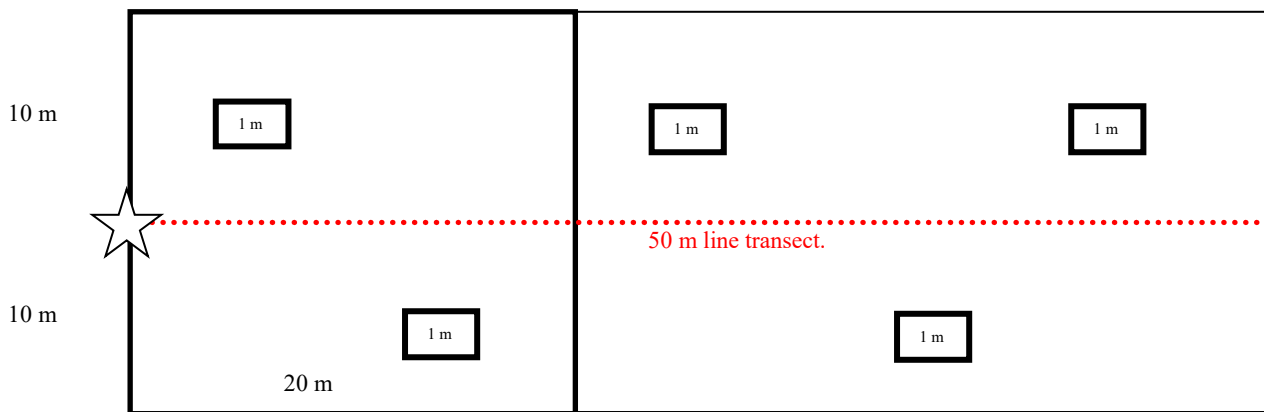


Figure 7.1 Schematic diagram illustrating the layout of the nested 20 x 50 m, 20 x 20 m, and 1 x 1 m sub-quadrats used for the assessment of condition attributes at each site

The following site attributes will be recorded at each vegetation integrity plot location:

- **Location** (easting – northing grid MGA 94, Zone 55).
- **Native and exotic species richness** (within a 400 m² quadrat): This consisted of recording all species by systematically walking through each 20 x 20 m quadrat. The cover and abundance (percentage of area of quadrat covered) of each species was estimated. The growth form, stratum/layer and whether each species was native/exotic/high threat weed was also recorded.
- **Number of trees with hollows** (1,000 m² quadrat): This was the frequency of hollows within living and dead trees within each 50 x 20 m quadrat. A hollow was only recorded if (a) the entrance could be seen: (b) the estimated entrance width was at least 5 cm across: (c) the hollow appeared to have depth: (d) the hollow was at least 1 m above the ground and the (e) the centre of the tree was located within the sampled quadrat.
- **Number of large trees and stem size diversity** (1,000 m² quadrat): tree stem size diversity was recorded by measuring the diameter at breast height (DBH) (i.e. 1.3 m from the ground) of living trees (>5 cm DBH) within each 50 x 20 m quadrat. For multi-stemmed living trees, only the largest stem was included in the count. Number of large trees was determined by counting all trees with DBH greater than the DBH large trees for each vegetation formation.
- **Evaluation of regeneration**: This was estimated as the presence/absence of overstorey species present at the site that was regenerating (i.e. saplings with a diameter at breast height ≤5 cm).
- **Total length of fallen logs** (1,000 m² quadrat): This was the cumulative total of logs within each 50 x 20 m quadrat with a diameter of at least 10 cm and a length of at least 0.5 m.

- **Litter cover:** This comprised estimating the average percentage groundcover of litter (i.e. leaves, seeds, twigs, branchlets and branches with a diameter <10 cm which is detached from a living plant) from within five 1 x 1 m sub-plots spaced evenly either side of the 50 m central transect.
- **Plant health:** signs of health decline of native species within the plot would be noted including infection by *Phytophthora cinnamomi* and Myrtle Rust.

Vegetation integrity assessment

Plot and transect survey data obtained from vegetation monitoring will be collated following each monitoring event to determine the composition, structure and function scores in accordance with the methodology outlined in the BAM 2020 (Department of Planning Industry and Environment 2020). This will be used to track changes in the condition of vegetation over time and provide a mechanism to assess how the offset area is progressing towards vegetation targets (see Section 6.3 for more detail). The combination of composition, structure and function scores will also be input into the BAM Calculator to provide an overall vegetation integrity (VI) score for each vegetation type. This will provide a robust measurement to assess the vegetation response to management actions adapt management as required across the offset area to achieve conservation gains.

Transect surveys

Groundcover will be recorded as part of 50 m transects used for vegetation integrity assessments. This would be determined by estimating the foliage projective cover of plants below 1 m in height at 50 points along the 50 m transect and calculating the average. The following categories of plants are to be recorded:

- **Native ground cover (grasses, shrubs, other):** includes all vegetation which is native to New South Wales, including grasses (Poaceae family), all woody vegetation below 1 m in height and non-woody vegetation (i.e. vascular plants – ferns and herbs) below 1 m in height.
- **Exotic plant cover:** vascular plants not native to Australia.
- **Bare ground.**
- **Litter cover.**
- **Rock cover.**

This will be used to measure both the proportion of bare ground within the offset area (indicator of grazing intensity) and provide an additional measure of cover of native and exotic vegetation.

7.1.2.2 Grass height assessments

As part of vegetation monitoring, grass height will be measured through five 1 m x 1 m squared quadrats (four plots in each corner of the 20 x 20 m quadrat used for vegetation plot and one 1 m x 1 m squared quadrat in the centre of the plot 20 x 20 m quadrat) (as illustrated in Figure 7.2). These assessments will be used to track the impacts of grazing over time and assess changes to grass biomass, as a result of threat reduction. Grazing animals are selective so species diversity (Section 7.1.2.1) will also be an indicator of grazing pressure.

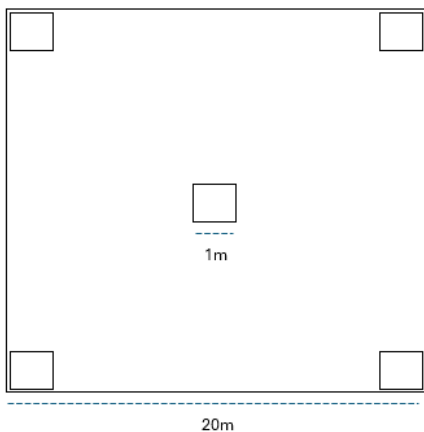


Figure 7.2 Placement of grass height plots (1 m x 1 m) within 20 m x 20 m vegetation quadrat

Grass height will be measured by visually estimating the average height of attached grass blades using a ruler (to the nearest mm) within each quarter of a quadrat, then averaging of height across all quadrats (giving a plot-level mean of grass height).

7.1.2.3 Weed monitoring surveys

Weed monitoring will primarily be undertaken through quantitative assessment of weed densities within vegetation integrity plots and transects. However, annual weed monitoring will also be undertaken to assess potential weed outbreaks elsewhere within the offset area. Assessing weeds within the entire offset area will primarily be undertaken annually using random meander surveys and rapid data point surveys (methodology for these surveys is outlined in Sections 3.2.1.1 and 3.2.1.2) to guide on ground weed control measures. Monitoring will actively identify not only weed outbreaks but any signs of health decline in native species including *Phytophthora cinnamomic* and Myrtle Rust which have not been recorded to date.

Follow up site visit will be conducted to assess the effectiveness of weed control measures. These visits will contribute to reducing weeds regrowth and establishment and will support the success of annual weed control efforts. This survey will be incorporated into other site-specific management actions.

7.1.3 Pest animal monitoring

Pest animal monitoring will be applied across the offset area and will track the effectiveness of pest animal control measures to reduce the presence and abundance of pest animal species. The procedures for pest animal monitoring are presented in Table 7.1.

7.1.4 Erosion monitoring

Monitoring of erosion will be applied across the offset area and will track the effectiveness of erosion control and stabilisation measures to remediate existing erosion and prevent additional erosion. The procedures for erosion monitoring are presented in Table 7.1.

Table 7.1 Monitoring program

Activity	Management zone	Method/procedure	Timing, frequency and duration	Performance indicators and trigger thresholds	Corrective actions	Responsible personnel
1. Photo point monitoring	All	<p>Photo point monitoring procedure. At each permanent monitoring point location:</p> <ul style="list-style-type: none"> — at head height take directional photos (north, east, south and west) — have previous year photos to confirm the correct zoom and aspect for photo — present photos in compliance report along with baseline photos to provide a comparison of change over time. <p>Locations of photo points will be established during baseline monitoring and marked using permanent markers (i.e. metal stakes/star pickets). Photo point markers will also be used to identify locations of vegetation plots..</p>	<p>Photo points established during baseline monitoring surveys.</p> <p>Monitored annually until completion criteria is met (Section 7.3.1) then every 5 years following this.</p>	Not applicable	Not applicable	Qualified ecologists (undertaken during vegetation monitoring)

Activity	Management zone	Method/procedure	Timing, frequency and duration	Performance indicators and trigger thresholds	Corrective actions	Responsible personnel
2. Vegetation monitoring	All	<p>Vegetation condition monitoring</p> <p>Permanent plot locations will be established within the offset area to monitor changes in vegetation over time. Locations of plots will be determined during baseline monitoring and demarcated using permanent markers (i.e. metal stakes/star pickets). At a minimum, three monitoring plots will be established within grassland and woodland vegetation zones (MZ1 and MZ2) and one plot within the heavy pine infestation zone (MZ3).</p> <p>Monitoring of vegetation condition is to be undertaken through vegetation integrity plot surveys as outlined in Section 3.2.1.3. This follows the BAM 2020 methodology (Department of Planning Industry and Environment 2020) which is based on a standard, repeatable and robust methodology of assessing vegetation condition and changes over time.</p> <p>Biomass and grass height monitoring</p> <p>Impacts of grazing will be undertaken using assessments of biomass and bare ground within vegetation integrity plots using the methodology outlined in Section 7.1.2.</p> <p>These assessments will be used to:</p> <ul style="list-style-type: none"> — monitor the impacts of herbivore grazing over time — assess changes to grass biomass as a result of threat reduction. 	<p>Baseline monitoring surveys to be conducted following offset establishment.</p> <p>Monitored annually until completion criteria is met (Section 7.3.1) then every 5 years following this.</p>	<p>Performance criteria:</p> <ul style="list-style-type: none"> — Achieve target quality gain for Box Gum Woodland and over 20 years of monitoring (improved vegetation integrity score and habitat quality score for offset in line with impacted vegetation). — Vegetation on track to meet benchmark scores for composition, structure and function in line with completion criteria after five years of monitoring. — No increase of restricted invasive plant and/or WoNS compared to previous monitoring event data. 	<p>If performance criteria are not met, corrective actions will be implemented to address the underlying cause and to progress the offset area toward the relevant completion criteria. One or more of the following corrective actions will be undertaken, as appropriate to the identified cause and site conditions:</p> <p>investigate to determine cause of limited progression to completion criteria</p> <ul style="list-style-type: none"> — investigate additional assisted regeneration of target MNES including direct seeding or replanting — revise the weed control measures — increase the intensity of the weed control for the target restricted 	<p>Qualified ecologists</p>

Activity	Management zone	Method/procedure	Timing, frequency and duration	Performance indicators and trigger thresholds	Corrective actions	Responsible personnel
		<p>Weed monitoring</p> <p>Weed monitoring in the offset area will be undertaken using the methodology outlined in section. These surveys will:</p> <ul style="list-style-type: none"> — focus particularly on disturbed areas, around access tracks and around the edges of the approved offset area to identify new or existing populations/infestations of potential threat to MNES — take notes on extent and severity of weed populations and map approximate area of outbreak. Where mapping is not feasible, infestation will be recorded descriptively to inform management response. 			<p>invasive plant and WoNS species.</p>	

Activity	Management zone	Method/procedure	Timing, frequency and duration	Performance indicators and trigger thresholds	Corrective actions	Responsible personnel
3. Pest animal monitoring	All	<p>Pest species monitoring will:</p> <ul style="list-style-type: none"> — identify individuals or evidence of pest presence within (or within close proximity to) the offset area. This will include noting of evidence such as scats, nests, warrens, rooting, damage to vegetation, excessive grazing — note the frequency and extent of pest animal presence throughout the site. <p>Pest animal monitoring will be undertaken as part of biannual monitoring surveys, with one survey occurring during the summer season to ensure seasonal variation is captured. Surveys will be conducted twice per year. Remote cameras may be used to assist monitoring, however, at least one of the two surveys must be ground-truthed until it can be confirmed that camera-based results are consistent and reliable.</p> <p>Monitoring will include random meanders and rapid data point surveys throughout the offset area. These surveys will make records of fauna species present at time of survey, record all evidence of pest fauna presence, take GPS records and photos to capture evidence and location of pest species and take scat samples where required, to confirm fauna ID.</p>	<p>Baseline monitoring surveys to be conducted following offset establishment.</p> <p>Biannual monitoring until completion criteria is met (Section 7.3.1) then every 5 years following this.</p>	<p>Performance criteria:</p> <ul style="list-style-type: none"> — Reduction of pest animal damage to vegetation (i.e. decrease in ground disturbance and only minimal (if any) browsing evident) after five years. — Increase in projected foliage cover for understorey native grass and forb species in line with completion criteria after five years of monitoring. — Reduction of records and evidence of pest species within offset area over five years 	<p>If performance criteria are not met, corrective actions will be implemented to address the cause of increased pest animal populations and to achieve the relevant performance and completion criteria. One or more of the following corrective actions will be undertaken, based on monitoring outcomes and identified causes:</p> <ul style="list-style-type: none"> — investigate cause of increased pest animal populations — review pest control program. Review and audit pest animal control measures to evaluate effectiveness and revise accordingly — increase intensity and frequency of pest control measures. <p>If corrective actions are proving unsuccessful,</p>	Qualified ecologists

Activity	Management zone	Method/procedure	Timing, frequency and duration	Performance indicators and trigger thresholds	Corrective actions	Responsible personnel
					adaptive management measures will be investigated and appropriate measures applied.	
4. Erosion monitoring	All	<p>Erosion monitoring will be undertaken as part of annual monitoring surveys and will include:</p> <ul style="list-style-type: none"> — recording of any new (or previously unrecorded) erosion or increase in the extent or severity of erosion — assessing the effectiveness of remediation measures and record any new erosion where measures are implemented — assessing the health and survival of plantings around remediation areas (where applicable). <p>Erosion monitoring will be undertaken as part of annual monitoring surveys and will include random meanders and rapid data point surveys throughout the offset area. Surveys will include GPS records and photos to mark out the extent and severity of eroded areas and detail any issues with remediation actions.</p>	<p>Baseline monitoring surveys to be conducted following offset establishment.</p> <p>Monitored annually until completion criteria is met (Section 7.3.1) then every 5 years following this.</p>	<p>Performance criteria:</p> <ul style="list-style-type: none"> — Regeneration and increased vegetation biomass in previously eroded areas. — No evidence of increased erosion extent at remediated sites. 	<p>If performance criteria are not met, the corrective actions will be implemented to address increased erosion or inadequate soil stability and to achieve the relevant performance and completion criteria. One or more of the following corrective actions will be undertaken, based on monitoring outcomes and identified causes:</p> <ul style="list-style-type: none"> — investigate causes of increased erosion or lack of soil stability — review erosion control measures to evaluate effectiveness and revise accordingly — increase extent of control measures. 	Qualified environmental officer.

7.2 Schedule of monitoring activities

Monitoring activities will be planned as part of the scheduled threat management actions. Monitoring an offset area prior to undertaking any control measures assists in effective planning to prioritise areas that require management. Follow up monitoring records the success on-ground management actions which can be updated in the annual compliance report. Photo point and vegetation surveys are aimed to record and measure vegetation change over the period the offset area is under management.

Scheduling these monitoring activities needs to be within optimum season when Box Gum Woodland likely to have highest native species diversity and high threat weeds are most likely to be identified, if present. In general, surveys are recommended to be conducted over two key survey periods (1) spring/summer and (2) autumn but timing can vary slightly depending on rainfall and weather patterns. A summary of the monitoring requirements is provided in Table 7.2.

Table 7.2 Monitoring schedule

Survey type	Methodology	Suitable months	Frequency
Photo point monitoring	Photo point monitoring surveys (Section 7.1.1)	September – January. Photo monitoring will be undertaken between September and January and aligned with vegetation monitoring, such that photographs are representative of the vegetation condition being assessed. Where photo monitoring is undertaken at a different time to vegetation monitoring, it will occur within the same monitoring season.	Annual (once per year)
Vegetation monitoring	Vegetation integrity surveys (Section 7.1.2.1)	September – January Timing may vary slightly year to year depending on seasonal conditions. Monitoring events will be timed with flowering of native grassland species, as assessed by suitably qualified ecologists.	Annual (once per year)
Pest animal monitoring	Pest animal monitoring surveys (Section 7.1.3)	All year	Annual (once per year)
Weed monitoring	Weed monitoring surveys (Section 7.1.2.3)	September – January March – May	Biannual (twice per year)
Grazing monitoring	Grass height assessments (Section 7.1.2.2)	September – January March – May	Biannual (twice per year)
Erosion monitoring	Erosion monitoring surveys (Section 7.1.4)	All year	As needed, including after high rainfall events. (Minimum of once per year).

7.3 Adaptive management

Adaptive management is a structured, iterative process of robust decision-making in the face of uncertainty, with an aim to reduce uncertainty over time via system monitoring. For the offset area, adaptive management will be applied based using the Plan–Implement–Monitor–Evaluate cycle, as recommended by DCCEEW and outlined in the Box Gum Grassy Woodlands guide (Rawlings, Freudenberger and Carr (2010).

As part of the adaptive management framework, methodologies and actions will be reviewed periodically and updated as necessary to reflect:

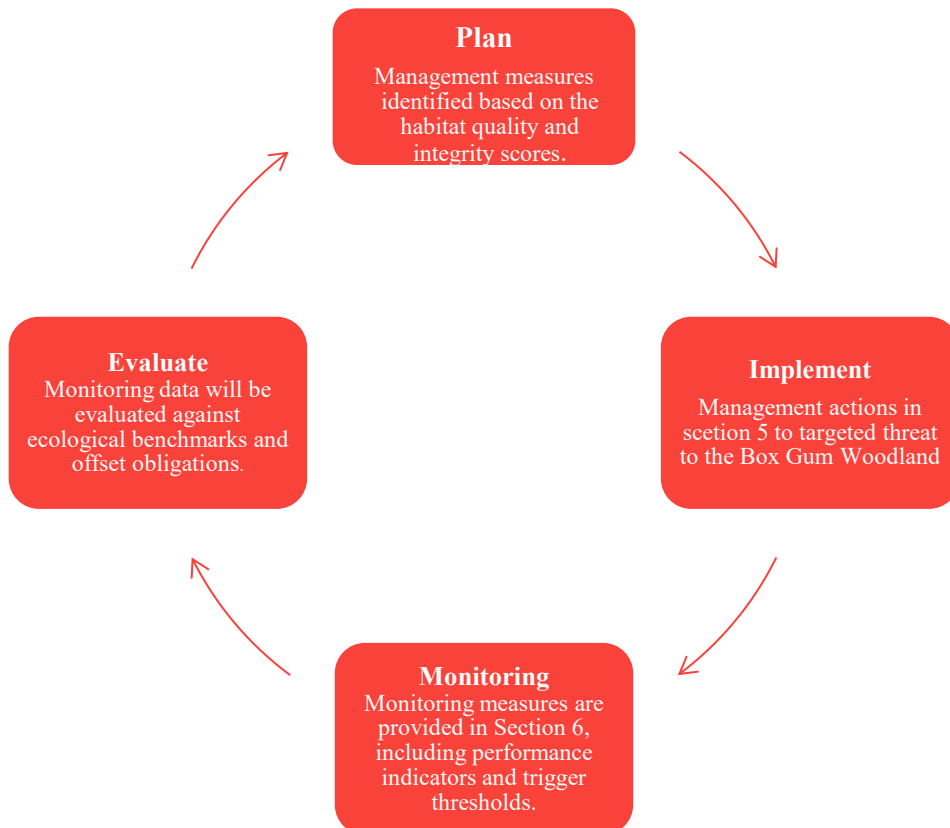
- emerging scientific knowledge and technological advancements
- changes in relevant legislation, policy, or regulatory guidance
- updates to recognised standards or codes of practice, including evolving definitions of industry best practice
- feedback from monitoring, evaluation, and stakeholder engagement.

The terminology and references used in this plan are based on current local NSW, and Commonwealth environmental frameworks. These may be updated over time to reflect changes in legislation, policy, or site conditions. For example, weed classifications are informed by relevant biosecurity and environmental legislation, including categories such as Priority Weeds, High Threat Weeds, and Weeds of National Significance, which guide targeted control and management priorities.

As legislation, policy, and site conditions evolve, updates will be incorporated through the adaptive management process and documented accordingly. This ensures the plan remains current, effective, and aligned with regulatory expectations.

Where ambiguity exists, reference will be made to authoritative sources such as government guidelines, peer-reviewed literature, and professional bodies (e.g. EIANZ, ANZG, IUCN) to interpret and apply best practice appropriately.

This approach ensures that adaptive management remains responsive, transparent, and aligned with contemporary expectations throughout the life of the project.



7.3.1 Completion criteria milestones

Tracking the performance of management and protection measures applied to the Box Gum Woodland offsets must be measurable over time through ongoing monitoring. Key management measures that support vegetation improvement include:

- weed control
- pest animal control
- grazing management
- erosion control.

The completion criteria have been developed to be achievable within a 20-year management timeframe and reflect the anticipated success of the applied risk mitigation and protection measures. The objective of the management actions is to achieve a quality score of 9 out of 10 for the Box Gum Woodland offset area. All management actions will need to be combined in order to successfully achieve the quality score.

Progress toward this target will be assessed against the relevant benchmarks, as defined in the NSW BioNet Vegetation Classification database (DCCEEW 2025). An increase in quality score will indicate that the ecological community is demonstrating signs of natural recruitment and improved floristic diversity and structure and function as a result of threat reduction. Reduction of all threats outlined will be required to achieve this quality score.

In accordance with the EPBC Act Environmental Offsets Policy, the target quality score for the Box Gum Woodland offset must be equal to or greater than the quality score of the Box Gum Woodland being impacted by the project. Therefore, the committed offset areas must improve from their baseline quality scores (7) to match or exceed the target score of the impacted Box Gum Woodland (9). This improvement is expected to result from the implementation of proposed management actions over the 20-year timeframe.

The anticipated milestones for achieving the completion criteria are outlined in Table 7.3. These milestone targets are indicative based on initial site assessment and will be refined following baseline monitoring assessments.

If monitoring data indicates that completion criteria milestones are not on track and are likely to fall short of the specified time horizon targets, corrective actions and adaptive management measures will be applied, as outlined in Table 7.7. Targeted shortfalls will be identified 12 to 24 months prior to the specified time horizons in Table 7.3 to allow sufficient time for intervention. These shortfalls would be assessed following monitoring activities and outlined in monitoring reports as detailed in Section 7.4.

All corrective actions must be implemented with consideration of site access requirements and safety protocols, particularly in areas that are remote, steep, or otherwise pose operational risks.

Table 7.3 Completion criteria milestones for Box Gum Woodland

Completion criteria milestone	Supporting evidence	Current score (from site assessment) ¹	Benchmark score	Target ²	Anticipated time horizon	Relevant management zones
Increased recruitment of native canopy species	Evidence of natural recruitment (seedlings) of canopy flora species (species composition) around the edges of woodland/grassland and within grassland vegetation following baseline monitoring.	3	3	<u>Completion criteria target:</u> ≥ 3 <u>Timeline targets:</u> 5-year target: 3 10-year target: ≥ 3 15-year target: ≥ 3	Year 1–20	MZ2
Increased native species richness in ground layer vegetation (grasses, forbs, ferns, other)	Evidence of increasing native groundcover species (species composition of grass, forb, fern and other) in all management zones following baseline monitoring. Species richness increasing toward benchmark targets.	9.6 (woodland plots) 8 (grassland plots)	20	<u>Completion criteria target:</u> ≥ 20 <u>Timeline targets:</u> 5-year target: 10–15 (woodland) 10 (grassland) 10-year target: 15 (woodland and grassland) 15-year target: 15–20 (woodland and grassland) 20-year target: ≥ 20 (woodland and grassland)	Years 15–20	All management zones
Increased native tree canopy cover	Evidence of increasing native tree canopy cover (projected foliage cover) in grassland areas following baseline monitoring. Progressive establishment in grassland areas. Canopy cover increasing toward benchmark targets.	1.2	19	<u>Completion criteria target:</u> ≥ 19 <u>Timeline targets:</u> 5-year target: 7 10-year target: 10–15 15-year target: 15–19 20-year target: ≥ 19	Years 15–20	MZ2

Completion criteria milestone	Supporting evidence	Current score (from site assessment) ¹	Benchmark score	Target ²	Anticipated time horizon	Relevant management zones
Increased native shrub cover	Evidence of increasing native shrub cover (projected foliage cover) in woodland areas following baseline monitoring. Progressive establishment in grassland areas. Shrub cover increasing toward benchmark targets.	0 (woodland plots) 0 (grassland plots)	1	<u>Completion criteria target:</u> ≥1 <u>Timeline targets:</u> 5-year target: 1 10-year target: ≥1 15-year target: ≥1 20-year target: ≥1	Years 5–20	All management zones
Increased native groundcover	Evidence of increasing native groundcover (projected foliage cover of grass, forb, fern and other) in all management zones following baseline monitoring. Groundcover increasing toward benchmark targets.	17.8 (woodland plots) 24.3 (grassland plots)	38	<u>Completion criteria target:</u> ≥38 <u>Timeline targets:</u> 5-year target: 20–25 (woodland) 25–30 (grassland) 10-year target: 35–38 (woodland and grassland) 15-year target: ≥38 20-year target: ≥38	Years 10–20	All management zones
Decreased exotic species cover	Evidence of reduced cover (projected foliage cover) of exotic plant species (weeds) within all management zones following baseline monitoring.	1.3 (woodland plots) 0.2 (grassland plots)	0	<u>Completion criteria target:</u> 0 <u>Timeline targets:</u> 5-year target: <1 (woodland and grassland) 10-year target: 0 (woodland and grassland) 15-year target: 0 (woodland and grassland) 20-year target: 0 (woodland and grassland)	Years 10–20	All management zones

Completion criteria milestone	Supporting evidence	Current score (from site assessment) ¹	Benchmark score	Target ²	Anticipated time horizon	Relevant management zones
Erosion stable or decreasing	Evidence of increasing soil stability in remediated areas (i.e. plant recruitment) and no evidence of increased erosion in offset area following baseline monitoring.	Moderate erosion present	Erosion decreasing/no new erosion evident	<u>Completion criteria target:</u> Erosion decrease <u>Timeline targets:</u> 5-year target: No new erosion 10–20-year target: evidence of erosion decrease	Years 5–10	All management zones
Decreased evidence of pest fauna	Decreasing evidence of pest fauna within offset area (i.e. records scats, diggings) following baseline monitoring.	Moderate evidence present (sightings during surveys, scats, warrens, ground disturbance)	No evidence of pest fauna	<u>Completion criteria target:</u> No evidence of pest fauna. <u>Timeline targets:</u> 5-year target: Minimal evidence of pest fauna 10–20-year target: No new evidence of pest fauna	Years 5–10	All management zones

- (1) Current scores are indicative only (from a small number of plots undertaken during initial site assessment) and are likely to be updated following detailed baseline monitoring.
- (2) Timeline targets are based on minimal baseline monitoring and may require updating following detailed baseline monitoring.

7.3.2 Targets for vegetation improvements

Targets for vegetation improvements within the offset area have been made using the vegetation condition benchmark as outlined in the BioNet Vegetation Classification data collection. As the composition data collected (species diversity) for the impacted vegetation was at benchmark values (see Section 4.4) the offset area will also be improved to meet (or exceed) benchmark conditions.

The NSW BioNet Vegetation Classification benchmarks describe the reference state to which sites will be compared to in order to score their site-scale biodiversity values or set goals for management or restoration. Three primary attributes are used for the benchmark including composition, structure and function, which can be determined by using the BAM for vegetation plots (as outlined in Section 3.2.1). These scores can then be combined into a total vegetation integrity score. Composition and structure scores are made using 0.04 ha plots, while function scores are made using 0.1 ha plots. Composition scores refer to species richness for each growth form (as shown in Table 7.4), structure benchmarks refer to the summed foliage cover for each growth form (as shown in Table 7.5) and function scores summarise the number of large trees, length of logs and cover of litter (as shown in Table 7.6).

Current plot scores from each vegetation type within the offset site have also been summarised against the benchmark condition (target scores) in Table 7.4, Table 7.5, and Table 7.6 respectively.

Table 7.4 Composition condition benchmarks and current plot means

Species composition (20 x 20 m plot)						
Growth form	Tree	Shrub	Grass	Forb	Fern	Other
Benchmark (target)	3	3	8	10	1	1
Current score for offset site woodland plots ('Moderate' vegetation)	2.3	0.3	6	2.3	1	0.3
Current score for offset site grassland plots ('Derived Grassland' vegetation)	3	0	4	3	1	0

Table 7.5 Structure condition benchmarks and current plot means

Projected foliage cover (20 x 20 m plot)						
Growth form	Tree	Shrub	Grass	Forb	Fern	Other
Benchmark (target)	19	1	32	6	0	0
Current score for offset site woodland plots ('Moderate' vegetation)	13.7	0	16.4	1.2	0.2	0
Current score for offset site grassland plots ('Derived Grassland' vegetation)	1.2	0	22.5	1.3	0.5	0

Table 7.6 Function condition benchmarks and current plot means

Vegetation structure data (20*50 m plot)					
Growth form	No. of large trees (>50cm DBH)	Litter Cover	Total length of fallen logs (m)	Tree regeneration (trees <5cm DBH)	High threat weed (HTW) cover (%)
Benchmark	4	55	41	Present	0
Current score for offset site woodland plots (Woodland)	3	76	79	Present	7.6
Current score for offset site grassland plots ('Derived Grassland' vegetation)	0	0	0	Present	0.2

7.3.3 *Trigger thresholds for completion criteria shortfalls and corrective actions*

In the event site condition monitoring and habitat quality monitoring results indicate the Box Gum Woodland offset is not appropriately progressing to the completion criteria, the corrective actions presented in Table 7.7 will be implemented, as relevant, to address identified deficiencies.

Based on the Box Gum Grassy Woodlands guide (Rawlings, Freudenberg and Carr 2010), the following management actions will be considered and, where appropriate, implemented to address declining condition. The selection and timing of actions will take into account site-specific conditions, access requirements and safety considerations.

Nutrient management:

- Carbohydrate addition (e.g. sugar or sawdust) to reduce nitrate levels.
- Scalping to remove nutrient-enriched topsoil.

Revegetation and regeneration:

- Direct seeding or tube stock planting of native grasses and forbs.
- Use of low-disturbance techniques in higher-quality zones.
- Thinning dense regeneration to improve understorey diversity.

Erosion control:

- Revegetation of eroded areas with deep-rooted perennials.

Weed and Biomass Control:

- Strategic grazing to reduce biomass and promote native species.
- Cool-season burns to reduce exotic annuals and stimulate native germination.

Table 7.7 Trigger thresholds for completion criteria shortfalls and corrective actions

Trigger thresholds for shortfalls	Relevant management zones	Corrective actions
<5% cover of canopy species (see current scores and targets in Sections 7.3.1 and 7.3.2)	MZ2	Investigate potential cause for lack of recruitment (e.g. overgrazing) and apply adaptive management principles if there is a lack species recruitment after the exclusion fencing has been installed. For example, options for scalping/seeding with infill canopy plantings. Revise trigger thresholds and management actions as required.
<50% of benchmark in species richness of understorey native flora species (see current scores and targets in Sections 7.3.1 and 7.3.2)	All management zones	Investigate potential causes for lack of richness (i.e. overgrazing of understorey, depleted soil seedbank) and consider additional measures as required. Consider options for scalping/seeding and infill native understorey plantings. Revise trigger thresholds and management actions as required.
Shrub diversity <25% of benchmark (see current scores and targets in Sections 7.3.1 and 7.3.2)	All management zones	Investigate potential causes for lack of increase (i.e. lack of shrub recruitment, over-browsing of shrub layer) and consider additional measures as required. Consider options for scalping/seeding and infill shrub plantings. Revise trigger thresholds and management actions as required.
Native understorey cover is <50% of benchmark (see current scores and targets in Sections 7.3.1 and 7.3.2)	All management zones	<p>Investigate potential causes for lack of cover (i.e. overgrazing of understorey, depleted soil seedbank) and consider additional measures as required.</p> <p>Determine cause of overgrazing:</p> <ul style="list-style-type: none"> — Survey density of kangaroos within offset area (ideally kangaroo density will be sustainable for grassy ecosystems and not exceed one kangaroo per hectare, though this number may need to be lower in woodland ecosystems with higher canopy cover (Fletcher 2006, Parkes and Forsyth 2014, ACT Government 2024)). Develop a kangaroo management plan to address issues of intensive kangaroo grazing. — Check for increase in pests and revise pest fauna control plan accordingly (i.e. consider increase in scale and intensity of control methods, include additional controls for new species if detected). <p>Consider additional controls including herbivore exclusion fencing scalping/seeding and infill native understorey plantings. Revise trigger thresholds and management actions as required.</p>

Trigger thresholds for shortfalls	Relevant management zones	Corrective actions
New weeds or pathogens discovered in offset area or increase in cover of weed populations in offset area (see current weed covers in Sections 7.3.1 and 7.3.2)	All management zones	Investigate potential causes for new or increased weeds (i.e. adjacent outbreaks, human or vehicle disturbance) and revise weed and pathogen control plan accordingly (i.e. consider increase in scale and intensity of weed control methods, or provide buffers for offset area to mitigate new infestations). Revise trigger thresholds and management actions as required.
New or increased evidence of pest fauna species within offset area	All management zones	Investigate potential causes for increased pest presence (i.e. damage to boundary fencing, drought) and revise pest fauna control plan accordingly (i.e. consider increase in scale and intensity of control methods, include additional controls for new species if detected). Revise trigger thresholds and management actions as required.

7.4 Reporting

Reporting under the monitoring program must clearly specify measurable performance indicators and the timeframes for their achievement, to assess progress toward each offset area outcome for the relevant protected matters.

The reporting framework must document the progress of each management activity (Table 7.1), including:

- annual timing of implementation
- success or effectiveness of the activity
- application of any performance indicators and trigger thresholds
- the corrective actions undertaken, where thresholds have been exceeded.

Where monitoring indicates that criteria milestones for the Box Gum Woodland are not being met, the principles of adaptive management must be applied. In such cases, corrective management actions will be implemented to ensure continued compliance with offset conditions.

All corrective actions must be implemented with due consideration of site access requirements and safety protocols, particularly in areas that are remote, steep, or otherwise pose operational risks.

This information must be recorded throughout the annual monitoring and management action program and collated in the annual compliance report. The reporting structure must clearly demonstrate progress toward achieving and maintaining the conservation outcomes for Box Gum Woodland.

8 Training, inductions, and emergency contacts

8.1 Environmental training requirements

All personnel involved in implementing the OMP, including Defence staff, contractors and subcontractors, must receive and have appropriate environmental training relevant to the environmental obligations outlined in this plan. This ensures that individuals are aware of their responsibilities under the EPBC Act and are equipped to support the effective delivery of offset commitments.

Training must include an overview of the OMP objectives, EPBC Act obligations, identification and protection of the Box Gum Woodland, the UXO Unexpected Finds Protocol and site access restrictions. All ecological monitoring must be undertaken by qualified ecologists with experience in vegetation condition assessment and EPBC Act compliance. Personnel must be familiar with the BAM, vegetation integrity plot surveys, and relevant Commonwealth and NSW environmental legislation.

Site inductions are mandatory prior to accessing the offset area. All contractors must complete a Defence National Base Induction via ServiceConnect, covering health and safety protocols, conditions of entry, and site-specific environmental sensitivities.

Contractors undertaking weed or pest control must meet specific training and licensing requirements. Weed control must comply with the Biosecurity Act. Pest control requires a valid NSW Pest Management Technician Licence issued by the NSW EPA, which includes accredited training and compliance with notification and reporting under the *NSW Pesticide Regulation 2009*. Herbicide use must follow label directions and any applicable permits. A training permit is required for trainees, and a fumigation licence is needed for use of fumigants such as phosphine or methyl bromide.

Training records must be maintained and include the name of the trainee, date and type of training, trainer's qualifications, and a summary of the training content.

Note: Additional training requirements such as bushfire risk management, UXO protocols, and general environmental awareness will be undertaken in accordance with the relevant management plans (e.g. Bushfire Management Plan, and the Environmental Management Plan).

8.2 Emergency contacts and procedures

The project will maintain a current list of emergency contacts responsible for managing environmental and bushfire emergencies. These individuals will have the authority to stop or direct works to ensure an effective emergency response and minimise risks to personnel, property, and the environment. The contact list will be reviewed regularly and updated as needed to reflect changes in site personnel, contractors, or organisational responsibilities. This list must be clearly displayed on-site and accessible to all staff and contractors, and will include:

- Environmental Manager
- Site Supervisor
- Base Services Contractor Representative
- Emergency Services (Police, Fire, Ambulance)
- Wagga Wagga City Council Environmental Officer
- Directorate of Environment and Heritage Policy Development (dehpd.policy@defence.gov.au)

Emergency Procedures will be:

- communicated during training and inductions
- reviewed annually and updated as necessary
- tested through emergency drills at least annually, and prior to the bushfire danger period.

Note: This OMP does not provide specific emergency contact names or phone numbers, as these are subject to change depending on the site, project phase, and organisational structure at the time of implementation.

9 Compliance

9.1 EPBC Act approval conditions

The EPBC Act approval conditions are presented in Appendix E of this OMP. The conditions of approval are to be applied in conjunction with implementation of this OMP for the duration of the agreement to ensure compliance with approval conditions (Table 2.3) are met and the definitions are clearly understood. The important component of compliance is identifying the differences between compliance and non-compliance and the reporting requirements for the annual compliance report. Statutory documents relevant to the Box Gum Woodland are summarised in Table 9.2 alongside where and how the OMP addresses each document.

9.1.1 *Securing the offset area*

Prior to commencement of any action, the approval holder must submit this OMP for approval to DCCEEW to compensate for the loss of 1.39 ha of Box Gum Woodland. The offset area of Box Gum Woodland needs to be located within the KMA.

As outlined in the EPBC Act approval conditions, the approval holder needs to secure the Box Gum Woodland offset area within 6 months of approval of the OMP to compensate for the residual impacts of the action on Box Gum Woodland (Condition 8). The approval holder must also notify and provide evidence to the department within 5 days of the offset area being secured (Condition 9).

9.1.2 *Reporting*

In accordance with the EPBC Act approval conditions (condition 33), an annual compliance report will occur following completion of each scheduled year of monitoring over the 20-year management timeframe. The scheduled compliance report will be provided to the Commonwealth Government's administering authority at a future date determined once the offset agreement is in place. The first compliance report will be provided to the administering authority after the first round of monitoring, and after each scheduled offset monitoring event (i.e. annual site monitoring), as outlined for each monitoring activity presented in Table 7.1. The compliance report will present the findings of relevant monitoring activities, and reasons as to why any management actions may or may not be meeting performance indicators (i.e. extreme weather events, newly identified threats). Management and maintenance issues will also be identified along with proposed corrective actions or adaptive management measures.

The approval holder must ensure each compliance report is completed to the satisfaction of the Minister and is consistent with the *Annual Compliance Report Guidelines, Commonwealth of Australia 2023*.

The approval holder must set up and maintain compliance records including monitoring data, surveys, maps, and other spatial and metadata.

The approval holder must achieve all conservation outcomes for the offset site specified in the approved OMP by the time specified in the OMP. Once achieved, the approval holder must maintain or exceed the conservation outcomes at least until the expiry date of this approval.

The approval holder must, within 40 business days of the 20th anniversary of the commencement of the Action:

The reporting and review mechanisms aim to provide compliance and non-compliance reporting structure to inform the department annually regarding compliance with the implementation of management measures and the attainment and maintenance of the set area outcomes.

9.1.3 Auditing

As outlined in the EPBC Act approval conditions (condition 42), the approval holder must ensure that an independent audit of compliance with the conditions is conducted for every audit period (each 5-year period following commencement of action) at the offset area. The independent auditor must be a suitably qualified ecologist as described in the conditions of approval.

9.2 Non-compliance

Non-compliance incidents need to be recorded and reported to the department by the approval holder. An incident can be an event or harm to a protected matter or other non-compliance events such as administrative non-compliance, or potential or actual non-compliant commitments identified in a plan.

The approval holder must notify the department within two days of an incident and respond in writing within 12 days of the incident occurring (conditions 40 and 41).

Failure to meet the requirements of the approved OMP may result in formal non-compliance under the EPBC Act. Consequences of non-compliance may include regulatory enforcement by DCCEE, such as directions to undertake corrective actions, increased reporting obligations, or legal proceedings. In serious cases, suspension or revocation of the EPBC approval may occur, which could impact the ability to continue or complete the approved Action. Ecologically, failure to achieve the conservation outcomes for Box Gum Woodland may trigger additional offset requirements or remediation obligations and compromise the long-term viability of the offset area.

In accordance with Condition 10, if conservation outcomes are not achieved within the specified timeframes outlined in the approved OMP, Defence will implement corrective actions and continue management in accordance with the trigger action response plan and EPBC Act approval conditions until the outcomes are achieved or until the expiry of the approval on 31 December 2046.

To remain compliant, Defence will implement all commitments outlined in the obligations OMP in accordance with the specified timeframes, maintain detailed records of monitoring and management actions, and apply adaptive management and corrective measures where performance indicators or completion criteria are not met. Defence will ensure that annual reporting and five-yearly audits are completed to the satisfaction of the Minister, and that conservation outcomes for Box Gum Woodland are achieved and maintained in until the expiry of the EPBC approval on 31 December 2046.

9.3 Enduring obligations post-handover

Defence acknowledges that the commitments outlined in this OMP extend beyond the construction phase of the BBK Redevelopment Project. In accordance with EPBC approval 2023/09649 and the EPBC Act Environmental Offsets Policy, Defence is responsible for ensuring that conservation outcomes for the Box Gum Woodland offset area are achieved and maintained until the expiry of the approval on 31 December 2046. If conservation outcomes are not achieved within the specified timeframes outlined in the approved OMP, Defence will implement corrective actions and continue management in accordance with EPBC Act approval conditions until the outcomes are achieved.

Table 9.1 sets out the obligations and responsibilities for managing the offset until the expiry of the EPBC approval.

Table 9.1 Key obligations for managing the offset area.

Obligation	Due / Frequency	Responsibility
Annual compliance monitoring and reporting	Every year until 31 December 2046 in accordance with EPBC Act approval conditions	Defence
Independent compliance audit	Every 5 years until 31 December 2046 in accordance with EPBC Act approval conditions	Defence (external auditor)
20-year conservation outcome assessment	By 6 Dec 2044 (20th anniversary)	Defence
Offset area securement	Within 6 months of OMP approval until 31 December 2046 in accordance with EPBC Act approval conditions	Defence
Monitoring and management actions (e.g. weeds, pests, erosion, grazing)	Until 31 December 2046 in accordance with EPBC Act approval conditions and OMP.	Defence

These obligations are critical to ensuring the offset area continues to deliver ecological benefits and meets the conservation outcomes required under the EPBC Act. Defence remains responsible for implementing all monitoring, reporting, and management actions outlined in the approved OMP, including adaptive management and corrective actions where necessary.

9.4 Statutory documents and policies

A number of statutory documents relevant to the Box Gum Woodland ecological community have been reviewed as part of the development of this OMP. These documents have directly informed the practical management measures proposed for the offset site, ensuring alignment with national conservation priorities and legislative requirements.

Where relevant to the offset site, and taking into account restricted access constraints, the plan incorporates targeted actions drawn from the approved conservation advice, recovery plan, and threat abatement plan under the EPBC Act.

Table 9.2 below identifies how each statutory document has been addressed within the management plan, mapping key recommendations to corresponding management measure.

Table 9.2 Relevant conservation advice, recovery plans and threat abatement plans

Document name and objectives	Where and how the OMP addresses this document
<p><u>Approved Conservation Advice:</u> <i>Conservation Advice for the White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland</i> (Commonwealth Department of Climate Change Energy the Environment and Water 2023)</p>	
<p>The priority recovery and threat abatement actions outlined in the Conservation Advice have been summarised as follows:</p> <p>Conserve remaining patches of the ecological community, including:</p> <ul style="list-style-type: none"> — identifying priority patches for formal protection and conservation management — ensuring that cumulative project impacts are reduced — retain adjacent patches for connectivity and buffers where possible. — aim to conserve patches with key habitat features (i.e. hollows, coarse woody debris), areas of habitat linkage and areas of regeneration. <p>Protect against key threats to the community from:</p> <ul style="list-style-type: none"> — soil disturbance and nutrient increases — introduction and spread of exotic species — impacts from development. If impacts are unavoidable, minimising impacts to highest quality areas and minimising indirect impacts should be prioritised. Surveys should also be undertaken to identify threatened and locally important flora/fauna prior to impact. <p>Use suitable management and restoration practices for the community through actions such as:</p> <ul style="list-style-type: none"> — identifying high priority sites for restoration — manage key risks such as nutrient increases, erosion, weed and pest fauna — assess and manage suitability of management practices such as fire management, grazing, restoration planting, fauna habitat enhancement and connectivity and fauna reintroductions. 	<p>This OMP addresses the priority recovery and threat abatement actions outlined in the approved conservation advice through the following mechanisms:</p> <ol style="list-style-type: none"> 1 The plan addresses the requirement for conservation of Box Gum Woodland by applying long-term active management and long-term protection of the Box Gum Woodland community in the offset area. 2 The plan also addresses the requirement to protect against key threats to the ecological community using management actions outlined in Section 6. Listed key threats to the community include soil disturbance, introduction and spread of exotic species, pest fauna and grazing. <ol style="list-style-type: none"> a Soil disturbance and nutrient increases will be managed through management of erosion and protection of the vegetation using an adaptive management approach which would assist to identify any new or emerging threats to the community. b The plan also outlines both weed and pest management actions which will be applied to the offset area. c The offset area will also be protected from additional human disturbances through establishment of site boundaries and signage to delineate the area, which will prevent foot or vehicle traffic, or waste accumulation in the offset area d Grazing will also be managed through management of key threats, with monitoring used to assess improvements in site condition over time. <p>Management of these key threats will be undertaken with the aim to encourage natural restoration of the community within the offset area, which would contribute to the requirement to provide further connectivity between woodland patches and fauna habitat enhancement.</p>

Document name and objectives	Where and how the OMP addresses this document
<p>Increase communication and awareness and promote conservation of the community on private lands.</p> <p>Provide opportunities for involvement in conservation by first nations communities.</p> <p>Continue research and monitoring of the community to increase understanding of ecology, response to key threats and response to management.</p>	<p>Adaptive management will be used to identify where management is not decreasing key threats, and if so additional options for management would be explored.</p> <p>The offset plan will also assist with the requirement for research by providing ongoing monitoring of the community over time, which could contribute to an understanding of the community response to management and key threats which have been identified (i.e. grazing, weeds, erosion and pest fauna).</p>
<p><u>Listing Advice:</u> <i>Commonwealth Listing Advice on White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland (Threatened Species Scientific Committee 2006)</i></p>	
<p>The Listing Advice for the community outlines priority actions for recovery and threat abatement for the community (highest priority actions at time of listing) which include:</p> <ul style="list-style-type: none"> — protection of remnants of the listed ecological community through the development of conservation agreements and covenants — protection of remnants from weeds, particularly Coolatai Grass, by preventing soil disturbance in and around remnants, and the speedy eradication of any new invasion — avoid the use of fertilisers in or near remnants — avoid soil disturbance in or near remnants, such as ripping planting lines and road grading — in very small, derived grassland sites, avoid planting trees as they may reduce the floral diversity through competition for light, nutrients and water — planting and other rehabilitation-focussed disturbance should focus on the edges of patches, expanding them, rather than within the patches — expansion and connection of existing remnants — exclusion of continuous grazing from remnants is important, coupled with weed management and control — use strategic grazing (incorporating rest at appropriate times) in areas still containing a diverse native understorey 	<p>This OMP addresses the priority recovery and threat abatement actions outlined in the Listing Advice through the following mechanisms:</p> <ol style="list-style-type: none"> 1 The plan addresses the requirement for conservation of Box Gum Woodland by applying long-term active management and long-term protection of the Box Gum Woodland community within the offset area. 2 The plan addresses the requirement to protect against weed species through the application of management actions to target weeds and ongoing monitoring to prevent new introductions and spread of weeds facilitate effective management. Weed management will be undertaken through an approach that limits the use of chemicals on native species. 3 Soil disturbance will be managed through erosion remediation management actions that will be intended to stabilise soil profiles and encourage natural regeneration of vegetation. No intensive disturbances such as ripping or grading would be undertaken within the offset area, unless management identifies it is required for the protection and enhancement of the Box Gum Woodland community.

Document name and objectives	Where and how the OMP addresses this document
<ul style="list-style-type: none"> — burning or slashing if native tussock grasses have built up to a high level, to open intertussock spaces for tree seedlings, forbs and shrubs to establish — for assistance and advice in implementing any of these suggested actions, land managers can contact the Grassy Woodlands Conservation Management Network. 	<p>4 Natural restoration within grassland patches between Box Gum Woodland remnants and at the edges of remnants will be supported within the offset area through the management of key threats including weeds and pests, grazing and erosion. Intensive grazing of native herbivores will be initially managed through the use of exclusion fencing, with the potential to keep access gates open should monitoring indicate excessive biomass increases over time. Low levels of native herbivore grazing are not anticipated to impact on native understorey diversity and may encourage growth of native forbs by creating inter-tussock spacing (Rawlings, Freudenberger and Carr 2010).</p> <p>Adaptive management will be used to identify where management is not decreasing key threats, and if so additional options for management would be explored.</p>
<p><u>Adopted/Made Recovery Plans:</u> <i>National Recovery Plan for White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland.</i> (Department of Environment Climate Change and Water 2010)</p>	
<p>The priority recovery and threat abatement actions outlined in the National Recovery Plan have been summarised as follows:</p> <p>Improve baseline information on the community through:</p> <ul style="list-style-type: none"> — use of survey and mapping to increase understanding of community extent and identify gaps — establishing clear protocols for monitoring and assessment of the community — identifying gaps in monitoring and data and improve baseline knowledge of community condition. <p>Increase protection of the community through:</p> <ul style="list-style-type: none"> — identifying known and potential sites for the community and identifying a strategy for management of these areas — establishing protection of key sites and increasing long-term stewardship agreements on private land — developing management plans and key targets for conservation of sites. 	<p>This OMP addresses the priority recovery and threat abatement actions outlined in the National Recovery Plan through the following mechanisms:</p> <ol style="list-style-type: none"> 1 Increasing understanding of the ecological requirements of the community and response to management through application of management actions to improve community condition and ongoing annual monitoring actions. This will be undertaken through an adaptive management approach which will be applied to refine improve protocols for monitoring and assessment in future. 2 Addressing the requirement for protection of the Box Gum Woodland community by applying long-term active management and key targets for conservation of the Box Gum Woodland community within the offset area.

Document name and objectives	Where and how the OMP addresses this document
<p>Improve community engagement through:</p> <ul style="list-style-type: none"> — targeted coordination and management of community conservation — education of key stakeholders through a variety of educational materials — facilitating engagement of indigenous communities <p>Continue ecosystem function and management research through:</p> <ul style="list-style-type: none"> — investigating impacts of threats and threat management — furthering understanding of ecological processes and relationships — monitoring different activities and practices at managed sites — identifying sites with high recovery potential and modelling best practice and management outcomes. <p>Improve compliance and regulatory activities through:</p> <ul style="list-style-type: none"> — developing a strategy to enhance understanding of and improve consideration of the community in planning processes — integrating Box Gum Woodland issues with other conservation programs — requirement for qualified ecologists to assess developments during appropriate seasons 	<p>3 The plan includes the management action to provide educational signage at key locations near the entrance of the offset area and around the boundary of the offset area. This will be used to inform personnel onsite on the key values that are being protected through the offset and increase understanding on the importance of these values and requirement for conservation.</p> <p>4 The plan includes the requirement for ongoing monitoring of Box Gum Woodland within the offset area. Monitoring actions have been developed with the intention of identifying best practice management for the community by assessing Box Gum Woodland response to management actions and setting measurable targets. The plan also provides trigger thresholds for completion criteria shortfalls to address where management can be improved to better meet ecological requirements. The monitoring and management actions may contribute to research by providing an understanding of the community response to management and developing best practice monitoring and management of the offset area through an adaptive approach.</p>

Document name and objectives	Where and how the OMP addresses this document
<p><u>Threat Abatement Plan:</u></p>	
<p><i>Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (Sus scrofa) (2017) (Department of the Environment and Energy 2017)</i></p>	
<p>This Threat Abatement Plan provides a national framework for feral pig management, with the primary aim to prevent further species and ecological communities from becoming threatened or extinct due to predation, habitat degradation, competition and disease transmission by feral pigs, and to improve protection for EPBC Act listed species and ecological communities currently threatened by feral pigs.</p> <p>Feral pigs will cause habitat destruction resulting in changes to vegetation communities and soil composition through digging, rooting and introduction of weeds. Pigs are also known to consume storage organs (i.e. tubers) from a range of native plant taxa such as lilies and orchids. Feral pig populations are known to negatively impact on the composition and structure of Box Gum Woodland vegetation. Feral pigs are also omnivores and may predate on native faunal assemblages within this community such as small mammals, birds, reptiles, frogs and invertebrates or introduce diseases and pathogens such as <i>Phytophthora cinnamomi</i>.</p>	<p>Feral pigs have not specifically been identified as a threat in the offset area during preliminary surveys, as no evidence (i.e. scats, digging, rooting or destruction of vegetation) was recorded in the site during surveys. However, it is possible that pigs may still occur within the offset area on occasion or may emerge as a new threat to the Box Gum Woodland community within the site in future.</p> <p>Management for pest species within the offset area will include detailed baseline monitoring assessments and development of a targeted program for pest animal management. Annual monitoring of pest presence within the site will also be established and will be used to establish if targets for reduction in pest presence over time are being met. If monitoring identifies evidence of feral pigs within the offset area or immediate vicinity, the pest fauna program will be adapted to include management of this threat. This would likely include a combination of control measures to reduce population densities in line with best practice management guidelines and protection measures to limit destruction of native vegetation and habitats.</p>

Document name and objectives	Where and how the OMP addresses this document
<p><u>Threat Abatement Plan:</u></p>	
<p><i>Threat abatement plan for disease in natural ecosystems caused by Phytophthora cinnamomi.</i> (Department of the Environment and Energy 2018)</p>	
<p>This Threat Abatement Plan aims to provide a national framework for management and control of the root-rot fungus <i>Phytophthora cinnamomi</i> ('Phytophthora'). The plan aims to protect environmental assets (threatened species and ecological communities listed under the EPBC Act and other matters of national environmental significance) from the impacts of Phytophthora dieback.</p> <p>Phytophthora is a pathogen with the ability to cause plant disease and death under suitable environmental conditions and can result in dramatic modifications to a plant community's structure and composition, sometimes resulting in extinction of flora species, habitat loss and degradation and reductions in primary productivity and functionality. Phytophthora dieback is a known threat to the survival of the Box Gum Woodland community and associated biodiversity.</p>	<p><i>Phytophthora cinnamomi</i> ('Phytophthora') has not specifically been identified as a threat during preliminary surveys of the offset area (i.e. through wilting foliage, plant dieback), however detailed baseline monitoring would be undertaken within the site to confirm the condition of the Box Gum Woodland community.</p> <p>Management actions undertaken within the site would be required to follow the Australian Government <i>Arrive Clean, Leave Clean Guidelines</i> (Department of the Environment 2015). These guidelines include specific measures to prevent the introduction and spread of Phytophthora including ensuring all personnel, vehicles and equipment entering the site are clean and free of soils and other biological materials prior to entering the site and ensuring any imported materials are free of weeds and pathogens are certified in accordance with Australian import standards.</p> <p>Adaptive management would be undertaken to ensure that any future identification of plant dieback as a result of Phytophthora would be addressed through inclusion of management measures as part of regular weed and pathogen controls measures implemented within the offset area, as required.</p>

9.5 Other documents, guidelines and permit requirements

Other key documents and guidelines that have informed this Offset Strategy are listed in Table 9.3.

Table 9.3 Key documents, guidelines and manuals

Title	Usage
<i>Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy</i> (Department of Sustainability Environment Water Population and Communities 2012a)	Guiding policy document that outlines the Australian Governments approach to the use and delivery of offsets under the EPBC Act, and how the suitability of offsets is evaluated and determined. It outlines the framework of the use of environmental offsets including when they can be required, how they are determined, and the framework under which they operate.
<i>Offsets Assessment Guide</i> (Department of Sustainability Environment Water Populations and Communities 2012)	EPBC Act OAG used to determine the required offsets for the relevant MNES threatened species.
<i>How to use the Offsets Assessment Guide</i> (Department of Sustainability Environment Water Population and Communities 2012)	Guideline that informs the application of the inputs to the <i>Offsets Assessment Guide</i> .
<i>Guidelines for biological survey and mapped data (2018)</i>	The species occurrence records must be provided in accordance with these guidelines and use the species observation data template provided with this request for additional information.
<i>Sensitive Ecological Data – Access and Management Policy V1.0 (2016)</i> .	Sensitive ecological data must be identified and treated in accordance with this policy.

9.5.1 EPBC Act Part 13 Permit requirements

In accordance with the EPBC Act, any action that may result in damage to a listed threatened ecological community requires a permit under Part 13 of the Act. The Box Gum Woodland ecological community is listed as Critically Endangered, and the installation of fencing within the offset area constitutes a physical disturbance within this community.

Any action that may result in disturbance, damage, or modification to the TEC, including but not limited to fencing installation, earthworks, or vegetation removal may trigger the need for a Part 13 permit. This applies even where the action is intended to support conservation outcomes, such as exclusion fencing to reduce grazing pressure.

Prior to undertaking any such activity, Defence must assess whether a Part 13 permit is required and, if so, obtain the necessary authorisation from the DCCEEW. The permit application will need to include:

- a description of the proposed fencing works and location
- justification for the action in relation to conservation outcomes
- measures to avoid or mitigate impacts during installation
- timing and access arrangements to minimise disturbance.

The requirement for a Part 13 permit applies in addition to the EPBC Act approval conditions and must be secured prior to any physical works commencing within the offset area.

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10.5 Limitations for ecological assessment

The preparation of this OMP has been informed by ecological data obtained from:

- review of reports informing previous vegetation and habitat surveys, flora and fauna surveys, and habitat quality surveys conducted across the impact area
- field verification of vegetation and habitat conducted across the offset area.

The survey methods applied for the offset area assessment and the ecological data obtained is based on best practice methods in NSW and are scientifically robust. It has informed the management actions required to protect, conserve, and enhance the vegetation condition to meet the Box Gum Woodland listing criteria.

The management measures outlined in this OMP are designed to reduce the risks associated with threatening processes and environmental uncertainties, thereby supporting the effective delivery of offsets. These measures aim to maximise the likelihood of achieving the performance targets and completion criteria established for the offset area. To address potential shortfalls in offset outcomes, the OMP incorporates corrective actions and an adaptive management framework, ensuring responsive and evidence-based adjustments throughout implementation.

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Appendix A

Vegetation plot data



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Plot : WG1		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	524924
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Northing	6110176
Species	Cover	15	13	1	1	5	5	0	1	3	1	1	Orientation	309
		Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20x20x50
		46.9	45.9	0.1	0.1	44.5	1.1	0	0.1	1	0.3		BAM Attributes 20x50m plot	
													Stem classes	
<i>Bothriochloa macra</i>	15	GG				15						no	80+	0
<i>Rytidosperma spp.</i>	15	GG				15						no	50-79	0
<i>Austrostipa scabra</i>	10	GG				10						no	30-49	0
<i>Panicum effusum</i>	4	GG				4						no	20-29	0
<i>Conyza bonariensis</i>	0.5	EX								0.5		no	10-19	0
<i>Sida corrugata</i>	0.5	FG					0.5					Important	5-9	0
<i>Eragrostis brownii</i>	0.5	GG				0.5						no	<5	0
<i>Carthamus lanatus</i>	0.3	HT										no	Hollows	0
<i>Dysphania pumilio</i>	0.2	FG					0.2					no	Length logs (m)	0
<i>Echium plantagineum</i>	0.2	EX								0.2		no	BAM Attributes 1x1 plot (%)	
<i>Vittadinia gracilis</i>	0.2	FG					0.2					no	Litter (%)	0
<i>Petrorhagia nanteuilii</i>	0.2	FG					0.2					no	BAM criteria	
<i>Acacia pycnantha</i>	0.1	TG		0.1								no	Predominantly native (perennial gc)	yes
<i>Glycine canescens</i>	0.1	OG							0.1			no	Non-grass species	6
<i>Solanum cinereum</i>	0.1	SG			0.1							no	Important species	1
												no	Regeneration >5cm dbh	No
												no	Characteristic canopy species	Likely previously
												no	Mature trees (> 40cm dbh; 20/ha)	No
												no	Patch >0.1 ha	n/a
												no	Patch >2ha	n/a
												no	Condition Class	not EPBC

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Plot : WG2		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	525047	
Species	Cover	12	11	3	0	4	3	1	0	1	1	1	Northing	
		Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Orientation		
		25.7	25.5	1.2	0	22.5	1.3	0.5	0	0.2	0.2	310		
<i>Acacia pycnantha</i>	0.1	TG		0.1								no	Plot size	
<i>Aristida ramosa</i>	2	GG				2						no	20x20x50	
<i>Austrostipa scabra</i>	10	GG				10						no	BAM Attributes 20x50m plot	
<i>Bothriochloa macra</i>	0.5	GG				0.5						no	Stem classes	
<i>Callitris glaucophylla</i>	0.1	TG		0.1								no	80+	
<i>Cheilanthes sieberi</i>	0.5	EG						0.5				no	50-79	
<i>Eucalyptus albens</i>	1	TG		1								no	30-49	
<i>Hypericum perforatum</i>	0.2	HT									0.2	no	20-29	
<i>Rytidosperma setaceum</i>	10	GG				10						no	10-19	
<i>Sida corrugata</i>	0.1	FG						0.1				Important	5-9	
<i>Vittadinia gracilis</i>	0.2	FG						0.2				no	<5	
<i>Xerochrysum viscosum</i>	1	FG						1				no	Hollows	
													Length logs (m)	
													0	
													BAM Attributes 1x1 plot (%)	
													Litter (%)	
													0	
													BGW criteria	
													Predominantly native	
													Yes	
													Non-grass species	
													4	
													Important species	
													1	
													Regeneration >5cm dbh	
													No	
													Characteristic canopy species	
													Likely previously	
													Mature trees (> 40cm dbh; 20/ha)	
													No	
													Patch >0.1 ha	
													n/a	
													Patch >2ha	
													n/a	
													Condition Class	
													not EPBC	

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Plot: WG3		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	525052
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Northing	6110953
Species	Cover	10	7	0	0	4	3	0	0	3	1	0	Orientation	235
		Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20x20x50
		82	80.5	0	0	80.1	0.4	0	0	1.5	0.2		BAM Attributes 20x50m plot	
													Stem classes	
<i>Bothriochloa macra</i>	70	GG				70						no	80+	0
<i>Enteropogon acicularis</i>	5	GG				5						no	50-79	0
<i>Panicum effusum</i>	5	GG				5						no	30-49	0
<i>Echium plantagineum</i>	1	EX								1		no	20-29	0
<i>Conyza bonariensis</i>	0.3	EX								0.3		no	10-19	0
<i>Hypericum perforatum</i>	0.2	HT										no	5-9	0
<i>Vittadinia gracilis</i>	0.2	FG					0.2					no	<5	0
<i>Juncus usitatus</i>	0.1	GG				0.1						no	Hollows	
<i>Euchiton sphaericus</i>	0.1	FG						0.1				no	Length logs (m)	
<i>Dysphania pumilio</i>	0.1	FG						0.1				no		0
													BAM Attributes 1x1 plot (%)	
													Litter (%)	
														0
													BGW criteria	
													Predominantly native (perennial gc)	yes
													Non-grass species	3
													Important species	0
													Regeneration >5cm dbh	No
													Characteristic canopy species	Likely previously
													Mature trees (> 40cm dbh; 20/ha)	No
													Patch >0.1 ha	n/a
													Patch >2ha	n/a
													Condition Class	
														not EPBC

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Plot : WG4		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	524999
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Northing	6110536
Species	Cover	10	8	0	0	5	3	0	0	4	1	0	Orientation	308
		Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20x20x50
		88.4	87.2	0	0	87.1	0.1	0	0	1.2	0.1		BAM Attributes 20x50m plot	
													Stem classes	
<i>Bothriochloa macra</i>	85	GG				85						no	80+	0
<i>Austrostipa scabra</i>	1	GG				1						no	50-79	0
<i>Conyza bonariensis</i>	0.8	EX								0.8		no	30-49	0
<i>Panicum effusum</i>	0.5	GG				0.5						no	20-29	0
<i>Rytidosperma spp.</i>	0.5	GG				0.5						no	10-19	0
<i>Echium plantagineum</i>	0.2	EX								0.2		no	5-9	0
<i>Hypericum perforatum</i>	0.1	HT										no	<5	0
<i>Vittadinia gracilis</i>	0.1	FG					0.1					no	Hollows	0
<i>Petrorhagia nanteuillii</i>	0.1	EX								0.1		no	Length logs (m)	0
<i>Eragrostis brownii</i>	0.1	GG				0.1						no	BAM Attributes 1x1 plot (%)	
		FG					0						Litter (%)	0
													BGW criteria	
													Predominantly native (perennial gc)	yes
													Non-grass species	3
													Important species	0
													Regeneration >5cm dbh	No
													Characteristic canopy species	Likely previously
													Mature trees (> 40cm dbh; 20/ha)	No
													Patch >0.1 ha	n/a
													Patch >2ha	n/a
													Condition Class	Not EPBC

Plot : WP1		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	525107
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Northing	6110077
Species	Cover	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Count	Orientation	198
		45.2	25.2	16	0	8	1	0.2	0	20	20	0	Plot size	20x20x50
<i>Eucalyptus albens</i>	15	TG		15								no	BAM Attributes 20x50m plot	
<i>Xerochrysum viscosum</i>	1	FG					1					no	Stem classes	
<i>Panicum effusum</i>	1	GG				1						no	80+	0
<i>Aristida ramosa</i>	1	GG				1						no	50-79	3
<i>Pinus spp.</i>	20	HT									20	no	30-49	1
<i>Callitris glaucophylla</i>	1	TG		1								no	20-29	1
<i>Rytidosperma spp.</i>	5	GG				5						no	10-19	1
<i>Enteropogon acicularis</i>	1	GG				1						no	5-9	1
<i>Cheilanthes sieberi</i>	0.2	EG						0.2				no	<5	1
													Hollows	0
													Length logs (m)	69
													BAM Attributes 1x1 plot (%)	
													Litter (%)	82
													BGW criteria	
													Predominantly native (perennial gc)	yes
													Non-grass species	2
													Important species	0
													Regeneration >5cm dbh	Yes
													Characteristic canopy species	Yes
													Mature trees (> 40cm dbh; 20/ha)	Yes
													Patch >0.1 ha	Yes
													Patch >2ha	Yes
													Condition Class	C

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Plot : WW1		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	525257
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Northing	6110142
Species	Cover	21	18	3	1	9	3	1	1	3	1	0	Orientation	270
		Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20x20x50
		41.8	39.1	15.2	0.1	22.2	1.3	0.2	0.1	2.7	0.5		BAM Attributes 20x50m plot	
													Stem classes	
													80+	2
													50-79	1
													30-49	1
													20-29	1
													10-19	1
													5-9	1
													<5	1
													Hollows	
													Length logs (m)	
													86	
													BAM Attributes 1x1 plot (%)	
													Litter (%)	
													87	
													BGW criteria	
													Predominantly native (perennial gc)	
													yes	
													Non-grass species	
													5	
													Important species	
													0	
													Regeneration >5cm dbh	
													Yes	
													Characteristic canopy species	
													Yes	
													Mature trees (> 40cm dbh; 20/ha)	
													Yes	
													Patch >0.1 ha	
													Yes	
													Patch >2ha	
													Yes	
													Condition Class	
													C	
<i>Eucalyptus albens</i>	15	TG		15								no		
<i>Xerochrysum viscosum</i>	1	FG						1				no		
<i>Brachychiton populneus</i>	0.1	TG		0.1								no		
<i>Panicum effusum</i>	5	GG				5						no		
<i>Austrostipa scabra</i>	10	GG				10						no		
<i>Marrubium vulgare</i>	2	EX								2		no		
<i>Hypericum perforatum</i>	0.5	HT										no	0.5	
<i>Cheilanthes sieberi</i>	0.2	EG						0.2				no		
<i>Callitris glaucophylla</i>	0.1	TG		0.1								no		
<i>Solanum cinereum</i>	0.1	SG			0.1							no		
<i>Elymus scaber</i>	0.5	GG				0.5						no		
<i>Poa sieberiana</i>	0.1	GG				0.1						no		
<i>Einadia trigonos</i>	0.2	FG						0.2				no		
<i>Rytidosperma spp.</i>	4	GG				4						no		
<i>Wahlenbergia communis</i>	0.1	FG						0.1				no		
<i>Aristida ramosa</i>	2	GG				2						no		
<i>Cyperus spp.</i>	0.3	GG				0.3						no		
<i>Coryza bonariensis</i>	0.2	EX								0.2		no		
<i>Juncus usitatus</i>	0.2	GG				0.2						no		
<i>Cynodon dactylon</i>	0.1	GG				0.1						no		
<i>Glycine canescens</i>	0.1	OG							0.1			no		

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Plot : WW2		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	525192
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Northing	6110259
Species	Cover	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Count	Orientation	21
		30.7	30.7	10	0	19.2	1.3	0.2	0	0	0	0	Plot size	20x20x50
<i>Austrostipa scabra</i>	10	GG				10						no	BAM Attributes 20x50m plot	
<i>Eucalyptus albens</i>	8	TG		8								no	Stem classes	
<i>Panicum effusum</i>	4	GG				4						no	80+	0
<i>Rytidosperma spp.</i>	4	GG				4						no	50-79	3
<i>Eucalyptus blakelyi</i>	2	TG		2								no	30-49	1
<i>Elymus scaber</i>	1	GG				1						no	20-29	1
<i>Xerochrysum viscosum</i>	1	FG					1					no	10-19	1
<i>Cheilanthes sieberi</i>	0.2	EG						0.2				no	5-9	1
<i>Einadia trigonos</i>	0.2	FG					0.2					no	<5	1
<i>Juncus usitatus</i>	0.2	GG				0.2						no	Hollows	
<i>Vittadinia gracilis</i>	0.1	FG					0.1					no	Length logs (m)	
												no	BAM Attributes 1x1 plot (%)	
												no	Litter (%)	
												no		
												no	BGW criteria	
												no	Predominantly native (perennial gc)	
												no	yes	
												no	Non-grass species	
												no	4	
												no	Important species	
												no	0	
												no	Regeneration >5cm dbh	
												no	Yes	
												no	Characteristic canopy species	
												no	Yes	
												no	Mature trees (> 40cm dbh; 20/ha)	
												no	Yes	
												no	Patch >0.1 ha	
												no	Yes	
												no	Patch >2ha	
												no	Yes	
												no	Condition Class	
												no	C	

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Plot : WW3		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	525150
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Northing	6110357
Species	Cover	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Count	Orientation	42
		24.4	23.4	17.1	0	5.1	1.2	0	0	1	1	0	Plot size	20x20x50
<i>Eucalyptus blakelyi</i>	15	TG		15								no	BAM Attributes 20x50m plot	
<i>Austrostipa scabra</i>	2	GG				2						no	Stem classes	
<i>Eucalyptus albens</i>	2	TG		2								no	80+	1
<i>Rytidosperma spp.</i>	2	GG				2						no	50-79	1
<i>Hypericum perforatum</i>	1	HT									1	no	30-49	1
<i>Panicum effusum</i>	1	GG				1						no	20-29	1
<i>Wahlenbergia communis</i>	1	FG						1				no	10-19	1
<i>Xerochrysum viscosum</i>	0.2	FG							0.2			no	5-9	1
<i>Callitris glaucophylla</i>	0.1	TG		0.1								no	<5	1
<i>Lomandra multiflora</i>	0.1	GG				0.1						no	Hollows	4 + 1 stag
													Length logs (m)	107
													BAM Attributes 1x1 plot (%)	
													Litter (%)	87
													BGW criteria	
													Predominantly native (perennial gc)	yes
													Non-grass species	2
													Important species	0
													Regeneration >5cm dbh	Yes
													Characteristic canopy species	Yes
													Mature trees (> 40cm dbh; 20/ha)	Yes
													Patch >0.1 ha	Yes
													Patch >2ha	Yes
													Condition Class	C

Plot : WW4		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	525111
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Northing	6110433
Species	Cover	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Count	Orientation	111
		19.9	19.9	15.6	0	3.8	0.5	0	0	0	0	0	Plot size	20x20x50
													BAM Attributes 20x50m plot	
													Stem classes	
<i>Eucalyptus albens</i>	15	TG		15								no	80+	0
<i>Aristida ramosa</i>	1	GG				1						no	50-79	2
<i>Austrostipa scabra</i>	1	GG				1						no	30-49	0
<i>Panicum effusum</i>	1	GG				1						no	20-29	1
<i>Eucalyptus blakelyi</i>	0.5	TG		0.5								no	10-19	1
<i>Rytidosperma spp.</i>	0.5	GG				0.5						no	5-9	1
<i>Xerochrysum viscosum</i>	0.5	FG					0.5					no	<5	0
<i>Lomandra multiflora</i>	0.3	GG				0.3						no	Hollows	2
<i>Callitris glaucophylla</i>	0.1	TG		0.1								no	Length logs (m)	81
													BAM Attributes 1x1 plot (%)	
													Litter (%)	54
													BGW criteria	
													Predominantly native (perennial gc)	yes
													Non-grass species	1
													Important species	0
													Regeneration >5cm dbh	Yes
													Characteristic canopy species	Yes
													Mature trees (> 40cm dbh; 20/ha)	Yes
													Patch >0.1 ha	Yes
													Patch >2ha	Yes
													Condition Class	C

Plot : WW5		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	525317
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Northing	6110504
Species	Cover	15	13	2	2	3	4	1	1	2	1	0	Orientation	131
		Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		Plot size	20x20x50
		37	36.7	9	15.1	11	1.3	0.2	0.1	0.3	0.2		BAM Attributes 20x50m plot	
													Stem classes	
													80+	1
													50-79	1
													30-49	1
													20-29	1
													10-19	1
													5-9	1
													<5	1
													Hollows	0
													Length logs (m)	20
													BAM Attributes 1x1 plot (%)	
													Litter (%)	48
													BGW criteria	
													Predominantly native (perennial gc)	yes
													Non-grass species	6
													Important species	0
													Regeneration >5cm dbh	Yes
													Characteristic canopy species	Yes
													Mature trees (> 40cm dbh; 20/ha)	Yes
													Patch >0.1 ha	Yes
													Patch >2ha	Yes
													Condition Class	C
Acacia spp.	15	SG			15								no	
Aristida ramosa	5	GG				5							no	
Eucalyptus blakelyi	5	TG		5									no	
Austrostipa scabra	4	GG				4							no	
Callitris glaucophylla	4	TG		4									no	
Panicum effusum	2	GG				2							no	
Xerochrysum viscosum	1	FG					1						no	
Cheilanthes sieberi	0.2	EG						0.2					no	
Hypericum perforatum	0.2	HT										0.2	no	
Conyza bonariensis	0.1	EX								0.1			no	
Glycine canescens	0.1	OG							0.1				no	
Solanum cinereum	0.1	SG		0.1									no	
Wahlenbergia communis	0.1	FG					0.1						no	
Gonocarpus teucroides	0.1	FG					0.1						no	
Vittadinia cuneata	0.1	FG					0.1						no	

Plot : WW6		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	525337
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Northing	6110382
Species	Cover	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Count	Orientation	237
		10.6	10.5	8	0	2	0.3	0.2	0	0.1	0.1	0	Plot size	20x20x50
<i>Eucalyptus albens</i>	8	TG		8								no	BAM Attributes 20x50m plot	
<i>Austrostipa scabra</i>	1	GG				1						no	Stem classes	
<i>Panicum effusum</i>	1	GG				1						no	80+	2
<i>Xerochrysum viscosum</i>	0.3	FG					0.3					no	50-79	1
<i>Cheilanthes sieberi</i>	0.2	EG						0.2				no	30-49	0
<i>Hypericum perforatum</i>	0.1	HT										no	20-29	1
													10-19	1
													5-9	1
													<5	1
													Hollows	2 + 2 stags
													Length logs (m)	114
													BAM Attributes 1x1 plot (%)	
													Litter (%)	63
													BGW criteria	
													Predominantly native (perennial gc)	yes
													Non-grass species	2
													Important species	0
													Regeneration >5cm dbh	Yes
													Characteristic canopy species	Yes
													Mature trees (> 40cm dbh; 20/ha)	Yes
													Patch >0.1 ha	Yes
													Patch >2ha	Yes
													Condition Class	C

Plot : WW7		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Northing	6110522
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Orientation	88
Species	Cover	15	15	5	1	4	4	1	0	0	0	0	Plot size	20x20x50
		Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum		BAM Attributes 20x50m plot	
		42.3	42.3	31.5	4	5.2	1.4	0.2	0	0	0		Stem classes	
<i>Eucalyptus blakelyi</i>	15	TG		15								no	80+	1
<i>Callitris glaucophylla</i>	12	TG		12								no	50-79	1
<i>Acacia spp.</i>	4	SG			4							no	30-49	1
<i>Austrostipa scabra</i>	4	GG				4						no	20-29	1
<i>Eucalyptus albens</i>	3	TG		3								no	10-19	1
<i>Acacia pycnantha</i>	1	TG		1								no	5-9	1
<i>Xerochrysum viscosum</i>	0.8	FG					0.8					no	<5	1
<i>Brachychiton populneus</i>	0.5	TG		0.5								no	Hollows	1
<i>Panicum effusum</i>	0.5	GG				0.5						no	Length logs (m)	69
<i>Rytidosperma spp.</i>	0.5	GG				0.5						no	BAM Attributes 1x1 plot (%)	
<i>Vittadinia gracilis</i>	0.3	FG					0.3					no	Litter (%)	73
<i>Cheilanthes sieberi</i>	0.2	EG						0.2				no	Litter (%)	
<i>Juncus usitatus</i>	0.2	GG				0.2						no		
<i>Hydrocotyle laxiflora</i>	0.2	FG					0.2					no		
<i>Wahlenbergia communis</i>	0.1	FG					0.1					no	BGW criteria	
													Predominantly native (perennial gc)	yes
													Non-grass species	5
													Important species	0
													Regeneration >5cm dbh	Yes
													Characteristic canopy species	Yes
													Mature trees (> 40cm dbh; 20/ha)	Yes
													Patch >0.1 ha	Yes
													Patch >2ha	Yes
													Condition Class	C

Plot : WW8		Covers	Native	Trees	Shrubs	Grass	Forb	Fern	Other	Exotic	HighThreat	BGW important species	Easting	525480
Sheet version: 20170224.1531		# spp	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Northing	6110623
Species	Cover	Sum cover	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Count	Orientation	3
		15.6	15.4	9	0.5	5.4	0.5	0	0	0.2	0.2	0	Plot size	20x20x50
<i>Eucalyptus albens</i>	8	TG		8								no	BAM Attributes 20x50m plot	
<i>Austrostipa scabra</i>	3	GG				3						no	Stem classes	
<i>Acacia pycnantha</i>	1	TG		1								no	80+	1
<i>Panicum effusum</i>	1	GG				1						no	50-79	2
<i>Rytidosperma spp.</i>	1	GG				1						no	30-49	1
<i>Acacia spp.</i>	0.5	SG			0.5							no	20-29	1
<i>Xerochrysum viscosum</i>	0.5	FG					0.5					no	10-19	1
<i>Hypericum perforatum</i>	0.2	HT									0.2	no	5-9	1
<i>Bothriochloa macra</i>	0.2	GG				0.2						no	<5	1
<i>Enteropogon acicularis</i>	0.2	GG				0.2						no	Hollows	1
												no	Length logs (m)	64
													BAM Attributes 1x1 plot (%)	
													Litter (%)	98
													BGW criteria	
													Predominantly native (perennial gc)	yes
													Non-grass species	1
													Important species	0
													Regeneration >5cm dbh	Yes
													Characteristic canopy species	Yes
													Mature trees (> 40cm dbh; 20/ha)	Yes
													Patch >0.1 ha	Yes
													Patch >2ha	Yes
													Condition Class	C

Appendix B

Species recorded



Species recorded

Table B.1 Flora species recorded in conservation area

Family name	Species name	Common name	Status (BC Act) ¹	Status (EPBC Act) ²	HT/WoNS ³
Fabaceae	<i>Acacia pycnantha</i>	Golden Wattle			
Fabaceae	<i>Acacia spp.</i>	Wattle			
Asphodeloidae	<i>Aloe spp.*</i>	Aloe			
Poaceae	<i>Aristida ramosa</i>	Purple Wiregrass			
Poaceae	<i>Austrostipa scabra</i>	Rough Spear grass			
Poaceae	<i>Bothriochloa macra</i>	Red Grass			
Malvaceae	<i>Brachychiton populneus</i>	Kurrajong			
Cupressaceae	<i>Callitris glaucophylla</i>	White Cypress Pine			
Asteraceae	<i>Carthamus lanatus*</i>	Saffron Thistle			HT
Pteridaceae	<i>Cheilanthes sieberi</i>	Rock Fern			
Asteraceae	<i>Conyza bonariensis*</i>	Flaxleaf Fleabane			
Poaceae	<i>Cynodon dactylon</i>	Common Couch			
Cyperaceae	<i>Cyperus spp.</i>	Sedge			
Chenopodioideae	<i>Dysphania pumilio</i>	Small Crumbweed			
Boraginaceae	<i>Echium plantagineum*</i>	Patterson's Curse			
Chenopodiaceae	<i>Einadia trigonos</i>	Fishweed			
Poaceae	<i>Elymus scaber</i>	Wheat Grass			
Poaceae	<i>Enteropogon acicularis</i>	Curly Windmill Grass			
Poaceae	<i>Eragrostis brownii</i>	Brown's Lovegrass			
Myrtaceae	<i>Eucalyptus albens</i>	White Box			
Myrtaceae	<i>Eucalyptus blakelyi</i>	Blakely's Red Gum			
Asteraceae	<i>Euchiton sphaericus</i>	Star Cudweed			
Fabaceae	<i>Glycine canescens</i>	Silky Glycine			
Haloragaceae	<i>Gonocarpus teucrioides</i>	Forest Raspwort			
Araliaceae	<i>Hydrocotyle laxiflora</i>	Stinking Pennywort			
Hypericaceae	<i>Hypericum perforatum*</i>	St. John's Wort			HT
Juncaceae	<i>Juncus usitatus</i>	Common Rush			
Asparagaceae	<i>Lomandra multiflora</i>	Many-flowered Mat-rush			
Solanaceae	<i>Lycium ferocissimum*</i>	Africa Boxthorn			HT/WoNS

Family name	Species name	Common name	Status (BC Act) ¹	Status (EPBC Act) ²	HT/WoNS ³
Lamiaceae	<i>Marrubium vulgare</i> *	White Horehound			
Poaceae	<i>Panicum effusum</i>	Hairy Panic			
Caryophyllaceae	<i>Petrorhagia nanteuilii</i> *	Proliferous Pink			
Pinaceae	<i>Pinus spp.</i> *	Pine			HT
Poaceae	<i>Poa sieberiana</i>	Snowgrass			
Poaceae	<i>Rytidosperma spp.</i>	Wallaby Grass			
Malvaceae	<i>Sida corrugata</i>	Corrugated Sida			
Solanaceae	<i>Solanum cinereum</i>	Narrawa Burr			
Asteraceae	<i>Vittadinia cuneata</i>	Fuzzy New Holland Daisy			
Asteraceae	<i>Vittadinia gracilis</i>	Woolly New Holland Daisy			
Campanulaceae	<i>Wahlenbergia communis</i>	Tufted Bluebell			
Asteraceae	<i>Xerochrysum viscosum</i>	Sticky Everlasting			

*Indicates an exotic species

- (1) V = Vulnerable, E = Endangered, and CE = Critically Endangered under the *NSW Biodiversity Conservation Act 2016*
- (2) V = Vulnerable, E = Endangered, and CE = Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999*
- (3) High threat weed as listed under the BAM 2020 ('HT') (Department of Planning Industry and Environment 2020) or Weed of National Significance ('WoNS') (Centre for Invasive Species Solutions 2025)

Table B.2 Fauna species recorded in offset area

Family name	Scientific name	Common name	Status (BC Act) ¹	Status (EPBC Act) ²
Birds				
Acanthizidae	<i>Acanthiza nana</i>	Yellow Thornbill		
Meliphagidae	<i>Anthochaera carunculata</i>	Red Wattlebird		
Anatidae	<i>Aix sponsa</i>	Wood Duck		
Campephagidae	<i>Coracina papuensis</i>	White-bellied Cuckoo-shrike		
Corcoracidae	<i>Corcorax melanorhamphos</i>	White-winged Chough		
Corvidae	<i>Corvus coronoides</i>	Australian Raven		
Artamidae	<i>Cracticus nigrogularis</i>	Pied Butcherbird		
Alcedinidae	<i>Dacelo novaeguineae</i>	Laughing Kookaburra		
Cacatuidae	<i>Eolophus roseicapilla</i>	Galah		
Columbidae	<i>Geopelia placida</i>	Peaceful Dove		
Corcoracidae	<i>Grallina cyanoleuca</i>	Magpie-lark		
Meliphagidae	<i>Lichmera indistincta</i>	Brown Honeyeater		
Meliphagidae	<i>Lichenostomus penicillatus</i>	White-plumed Honeyeater		
Meliphagidae	<i>Manorina melanocephala</i>	Noisy Miner		
Columbidae	<i>Ocyphaps lophotes</i>	Crested Pigeon		
Pachycephalidae	<i>Pachycephala rufiventris</i>	Rufous Whistler		
Pardalotidae	<i>Pardalotus punctatus</i>	Spotted Pardalote		
Pardalotidae	<i>Pardalotus striatus</i>	Striated Pardalote		
Psittacidae	<i>Platycercus elegans</i>	Crimson Rosella		
Psittacidae	<i>Platycercus eximius</i>	Eastern Rosella		
Psittacidae	<i>Polytelis swainsonii</i>	Superb Parrot	V	V
Pomatostomidae	<i>Pomatostomus temporalis</i>	Grey-crowned Babbler	V	
Acanthizidae	<i>Smicrornis brevirostris</i>	Weebill		
Psittaculidae	<i>Trichoglossus moluccanus</i>	Rainbow Lorikeet		
Mammals				
Macropodidae	<i>Macropus giganteus</i>	Eastern Grey Kangaroo		
Leporidae	* <i>Oryctolagus cuniculus</i>	European Rabbit (scats)*		
Macropodidae	<i>Wallabia bicolor</i>	Swamp Wallaby		
Canidae	<i>Vulpes vulpes</i>	European Red Fox*		

(1) V = Vulnerable, E = Endangered, and CE = Critically Endangered under the *NSW Biodiversity Conservation Act 2016*

(2) V = Vulnerable, E = Endangered, and CE = Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999*

Appendix C

PMST results





Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 22-May-2025

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	45
Listed Migratory Species:	8

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	207
Commonwealth Heritage Places:	None
Listed Marine Species:	16
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	9
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [[Resource Information](#)]

Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	600 - 700km upstream from Ramsar site	In feature area
Hattah-kulkyne lakes	400 - 500km upstream from Ramsar site	In feature area
Riverland	500 - 600km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	600 - 700km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities [[Resource Information](#)]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area	In feature area
Weeping Myall Woodlands	Endangered	Community may occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [[Resource Information](#)]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lophochroa leadbeateri leadbeateri Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo, Pink Cockatoo (eastern) [82926]	Endangered	Species or species habitat may occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat known to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area	In feature area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
CRUSTACEAN			
Euastacus armatus Murray Crayfish [81537]	Vulnerable	Species or species habitat known to occur within area	In feature area

FISH

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bidyanus bidyanus Silver Perch, Bidyan [76155]	Endangered	Species or species habitat known to occur within area	In buffer area only
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat known to occur within area	In buffer area only
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In feature area
Nannoperca australis Murray-Darling Basin lineage Southern Pygmy Perch (Murray-Darling Basin lineage) [91711]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
FROG			
Crinia sloanei Sloane's Froglet [59151]	Endangered	Species or species habitat may occur within area	In feature area
Litoria raniformis Southern Bell Frog, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat may occur within area	In feature area
INSECT			
Keyacris scurra Key's Matchstick Grasshopper [89739]	Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
PLANT			
Austrostipa wakoolica [66623]	Endangered	Species or species habitat may occur within area	In feature area
Brachyscome muelleroides Mueller Daisy [15572]	Vulnerable	Species or species habitat may occur within area	In feature area
Caladenia arenaria Sand-hill Spider-orchid [9275]	Endangered	Species or species habitat may occur within area	In feature area
Caladenia concolor Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat may occur within area	In feature area
Lepidium aschersonii Spiny Peppercross [10976]	Vulnerable	Species or species habitat may occur within area	In feature area
Lepidium monoplocoides Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area	In buffer area only
Prasophyllum petilum Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area	In feature area
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Swainsona recta Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat may occur within area	In feature area
REPTILE			
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands

[[Resource Information](#)]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Commonwealth Bank of Australia		
Commonwealth Land - Commonwealth Bank of Australia [14932]	NSW	In buffer area only
Commonwealth Land - Commonwealth Bank of Australia [14796]	NSW	In buffer area only
Communications, Information Technology and the Arts - Australian Broadcasting Corporation		
Commonwealth Land - Australian Broadcasting Corporation [14954]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [14953]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14959]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14955]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14691]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14692]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14697]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14911]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14946]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [14945]	NSW	In buffer area only
Defence		
Commonwealth Land - Defence Service Homes Corporation [14949]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [14919]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [14921]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [14920]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [14947]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Service Homes Corporation [14910]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [14916]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [14915]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [14917]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11192]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11193]	NSW	In feature area
Defence - BLAMEY BARRACKS - KAPOOKA [11190]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11183]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11184]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11182]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11189]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11188]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11187]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11186]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11185]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11191]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11181]	NSW	In buffer area only
Defence - BLAMEY BARRACKS - KAPOOKA [11180]	NSW	In buffer area only
Defence - WAGGA ARES DEPOT ; BLAMEY BKS -WAGGA WAGGA TRG DEP [11208]	NSW	In buffer area only
Defence - WAGGA ARES DEPOT ; BLAMEY BKS -WAGGA WAGGA TRG DEP [11206]	NSW	In buffer area only
Defence - WAGGA ARES DEPOT ; BLAMEY BKS -WAGGA WAGGA TRG DEP [11207]	NSW	In buffer area only
Defence - Defence Housing Authority		
Commonwealth Land - Defence Housing Authority [14837]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14836]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14835]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14834]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [14933]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14931]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14930]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14937]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14936]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14813]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14810]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14811]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14816]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14819]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14812]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14817]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14814]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14839]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14815]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14878]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14860]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14831]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14832]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14833]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14830]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14958]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14950]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14957]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14952]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14951]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14825]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [14956]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14827]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14797]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14828]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16250]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16251]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14840]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14887]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14809]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14808]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14805]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14942]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14944]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14824]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14822]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14906]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14902]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14907]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14901]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14900]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14826]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14852]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14853]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14823]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14928]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14862]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14861]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [14903]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14863]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14866]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14865]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15719]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14867]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14926]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14927]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14924]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14821]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14923]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14925]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14859]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14929]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16129]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14904]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14905]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14869]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14868]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14845]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14844]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14843]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14842]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14849]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14848]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14847]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14846]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [14940]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14841]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14909]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14939]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14938]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14935]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14934]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14908]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16130]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14880]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14881]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14882]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14883]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14889]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14888]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14855]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14854]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14857]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14856]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14858]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14912]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14913]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14941]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14894]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14851]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14850]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14891]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [14798]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14890]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14799]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14864]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14838]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16344]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16345]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16248]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16249]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15720]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14820]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14948]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14818]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14893]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14892]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16347]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16346]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14897]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14896]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14886]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16126]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14804]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16343]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14806]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14800]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14801]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14802]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [14803]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16349]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16348]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14876]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14877]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14874]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14875]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14829]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14885]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16128]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16131]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16350]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14722]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14895]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14898]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14872]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14871]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14873]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16127]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14899]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14870]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14879]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14914]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14782]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14918]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14922]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14943]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [14696]	NSW	In buffer area only
Commonwealth Land - [14807]	NSW	In buffer area only
Commonwealth Land - [14884]	NSW	In buffer area only

Listed Marine Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

EPBC Act Referrals				[Resource Information]	
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status	

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Blamey Barracks Kapooka Redevelopment Project	2023/09649		Post-Approval	In feature area
EnergyConnect NSW - Eastern Section	2020/8766		Post-Approval	In buffer area only
Controlled action				
Olympic Highway Realignment & Construct Road-Over-Rail Bridge, Wagga Wagga NSW	2013/6956	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Albury to Illabo Section of Inland Rail	2020/8670	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Red Hill Road extension	2005/2311	Not Controlled Action	Completed	In buffer area only
Wagga Wagga Gas-Fired Power Station	2003/1182	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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Appendix D

Offset calculation



Offsets Assessment Guide

For use in determining offsets under the Environment Protection and Biodiversity Conservation Act 1999
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	BGW
EPBC Act status	Critically Endangered
Annual probability of extinction Based on IUCN category definitions	6.8%

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator							
Impact calculator	Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
	<i>Ecological communities</i>						
	Area of community	Yes		Area	1.39	Hectares	
				Quality	9	Scale 0-10	
				Total quantum of impact	1.25	Adjusted hectares	
	<i>Threatened species habitat</i>						
	Area of habitat	No		Area			
				Quality			
				Total quantum of impact	0.00		
	Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Number of features e.g. Nest hollows, habitat trees	No						
Condition of habitat Change in habitat condition, but no change in extent	No						
<i>Threatened species</i>							
Birth rate e.g. Change in nest success	No						
Mortality rate e.g. Change in number of road kills per year	No						
Number of individuals e.g. Individual plants/animals	No						

Offset calculator																				
Offset calculator	Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)	Start area and quality	Future area and quality without offset	Future area and quality with offset	Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost (\$ total)	Information source			
	<i>Ecological Communities</i>																			
	Area of community	Yes	1.25	Adjusted hectares	Current management	Risk-related time horizon (max. 20 years)	20	Start area (hectares)	15.3	Risk of loss (%) without offset	0%	Risk of loss (%) with offset	0%	0.00	80%	0.00	0.00	1.90	152.03%	Yes
							Future area without offset (adjusted hectares)	15.3	Future area with offset (adjusted hectares)	15.3										
							Time until ecological benefit	10	Start quality (scale of 0-10)	7	Future quality without offset (scale of 0-10)	5	Future quality with offset (scale of 0-10)	8	3.00	80%	2.40			
	<i>Threatened species habitat</i>																			
	Area of habitat	No				Time over which loss is averted (max. 20 years)		Start area (hectares)		Risk of loss (%) without offset		Risk of loss (%) with offset								
							Future area without offset (adjusted hectares)	0.0	Future area with offset (adjusted hectares)	0.0										
							Time until ecological benefit		Start quality (scale of 0-10)		Future quality without offset (scale of 0-10)		Future quality with offset (scale of 0-10)							
	Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)	Start value	Future value without offset	Future value with offset	Raw gain	Confidence in result (%)	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost (\$ total)	Information source			
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
<i>Threatened species</i>																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g. Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary								
Summary	Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost (\$)		
						Direct offset (\$)	Other compensatory measures (\$)	Total (\$)
	Birth rate	0				\$0.00		\$0.00
	Mortality rate	0				\$0.00		\$0.00
	Number of individuals	0				\$0.00		\$0.00
	Number of features	0				\$0.00		\$0.00
	Condition of habitat	0				\$0.00		\$0.00
	Area of habitat	0				\$0.00		\$0.00
	Area of community	1.251	1.90	152.03%	Yes	\$0.00	N/A	\$0.00
						\$0.00	\$0.00	\$0.00

Appendix E

Conditions of approval





Notification of approval decision

Blamey Barracks Kapooka Redevelopment Project (EPBC 2023/09649)

This decision is made under section 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Note that section 134(1A) of the EPBC Act also applies to this approval. That provision provides, in general terms, that if the approval holder authorises another person to undertake any part of the Action, the approval holder must take all reasonable steps to ensure that the other person is informed of any conditions attached to this approval, and that the other person complies with any such conditions.


Action

person to whom the approval is granted (approval holder)	Department of Defence ABN: 68 706 814 312
Action	To redevelop the Blamey Barracks Kapooka military area near Wagga Wagga NSW, including upgrades to existing facilities, construction of new facilities and ancillary infrastructure, and involving vegetation clearing and earthworks. See EPBC Act referral 2023/09649.

Approval decision

decision	My decisions on whether or not to approve the taking of the Action for the purposes of each controlling provision for the Action are as follows.	
	Controlling Provision	Decision
	Listed threatened species and communities (section 18 and section 18A)	Approved
	Commonwealth Actions (section 28)	Approved
period for which the approval has effect	This approval has effect until 31 December 2046.	
conditions of approval	The approval is subject to conditions under the EPBC Act as set out in Annexure A.	

Person authorised to make decision

name and position	Kate Gowland Branch Head Environment Assessments (NSW, ACT)
signature	
date of decision	6 December 2024

Annexure A

Note: Words and terms appearing in **bold** (excluding headings) have the meaning assigned to them at **Part C – Definitions**.

Part A – Avoidance, mitigation, and compensation conditions

CLEARING LIMITS

- 1) The approval holder must not:
 - a) **clear** outside the **Action area**.
 - b) **construct** outside the **Action area**.
- 2) The approval holder must not **clear** more than 1.39 hectares (ha) of **BGW**. The approval holder must not **clear** any **BGW** outside the **BGW direct impact area**.
- 3) If the approval holder detects the presence, where likely to be affected by the Action, of any **protected matter** or the habitat of any **protected matter** not previously reported to the **department** as part of the referral or assessment of this Action or in accordance with this condition, the approval holder must:
 - a) notify the **department** in writing of the presence and likely extent of the **protected matter** or **protected matter** habitat within 10 **business days** of detecting its presence, and
 - b) not **clear** any area where the **protected matter** or the habitat of the **protected matter** is located without approval by the **department**.

MANAGEMENT OF RETAINED BGW

- 4) The approval holder must undertake all necessary mitigation and management measures to protect retained **BGW** within 30 metres of the **Action area** from impacts during **construction**, including:
 - a) excluding these areas from worker access using fencing and signage,
 - b) diverting **construction** runoff and sediment away from areas of retained **BGW**,

- c) suppressing dust generated during **construction**,
- d) implementing appropriate controls to limit weeds entering the Blamey Barracks Kapooka military area on vehicles and in imported materials, and
- e) implementing appropriate controls to prevent the introduction of the root-rot fungus *Phytophthora cinnamomi* onto the Blamey Barracks Kapooka military area during **construction** in accordance with the *Threat abatement plan for disease in natural ecosystems caused by Phytophthora cinnamomi* (Department of Environment and Energy, 2018).

BGW IN-PERPETUITY OFFSET AREA

OFFSET MANAGEMENT PLAN

- 5) To compensate for the residual significant impacts of the Action on **BGW**, prior to **commencement of the Action**, the approval holder must submit to the **department** for approval by the **Minister** an Offset Management Plan (OMP) for an area of **BGW** in the Blamey Barracks Kapooka military area. The approval holder must not **commence the Action** unless the OMP has been approved in writing by the **Minister**. The approval holder must commence implementing the approved OMP no later than the **commencement of the Action** and continue to implement the approved OMP at least until the expiry date of this approval.
- 6) The OMP must meet the requirements of the **Environmental Offsets Policy** and the **Environmental Management Plan Guidelines** to the satisfaction of the **Minister**. All commitments, including environmental outcomes, management measures, corrective actions, trigger values and performance indicators in the OMP must be **SMART** and based on referenced or included evidence of effectiveness. The OMP must be prepared by a **suitably qualified ecologist** and must include:
 - a) detailed information on the residual impacts to **BGW** that will be compensated for by the **offset area** (comprising both the **securement** of the **offset area** and the **vegetation condition** improvements to be achieved in the **offset area**), including:
 - i) all areas of **BGW** impacted by the Action,
 - ii) a reference to the **EPBC Act** approval conditions to which the OMP refers,
 - iii) detailed information and a **shapefile** specifying the location, area and boundary of the **offset area**, and
 - iv) detailed baseline information on the **vegetation condition** of **BGW** in the **offset area**, achievable **offset area** outcomes, relevant to the conservation of **BGW** and the timeframes in which they will be achieved,
 - b) a table summarising all commitments to achieve the conservation outcomes for **BGW** in the **offset area** and a reference to where each commitment is detailed in the OMP,

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- c) reporting and review mechanisms to inform the **department** annually regarding compliance with the implementation of management measures and the attainment and maintenance of the **offset area** outcomes,
 - d) an assessment of risks to achieving each **offset area** outcome and what risk management measures and/or strategies will be applied to address these,
 - e) a monitoring program, which must specify measurable performance indicators and the timeframes for their achievement to gauge attainment of each **offset area** outcome for the **protected matters**,
 - f) trigger action response **plan** including:
 - i) performance (outcomes) indicators,
 - ii) trigger values for corrective measures and explanation of their effectiveness for this purpose,
 - iii) monitoring **plan**, including methods, timing, effort to detect trigger values,
 - iv) corrective measures to be implemented to ensure conservation outcomes for the **BGW** are achieved or maintained if trigger values are reached or performance indicators not achieved in the specified timeframes, and
 - v) details of how progress towards attainment and maintenance of conservation outcomes for **BGW** will be demonstrated, and
 - g) references to related **plans** and conditions of approval, and how the **offset area** will be protected, including **securement**, and all **offset area** outcomes maintained or improved, at least until the expiry of the approval.
- 7) Within 5 **business days** of commencing implementation of the approved OMP, the approval holder must notify the **department** of the date on which implementation of the OMP commenced.

BGW OFFSET AREA SECUREMENT

- 8) To compensate for the residual impacts of the Action on **BGW**, the approval holder must **secure** the **offset area** specified in the approved OMP within 6 months of approval of the OMP.
- 9) The approval holder must notify and provide evidence to the **department** in writing within 5 **business days** of the **offset area** site being **secured**.

ACHIEVEMENT OF OFFSET AREA OUTCOMES

- 10) The approval holder must achieve all conservation outcomes for the **offset area** specified in the approved OMP by the time specified in the OMP. Once achieved, the approval holder must maintain or exceed the conservation outcomes at least until the expiry date of this approval.
- 11) The approval holder must, within 40 **business days** of the 20th anniversary of the **commencement of the Action**:

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- a) have the **offset area** assessed by a **suitably qualified ecologist** to determine if the conservation outcomes have been achieved, and
- b) notify the **department** in writing of any conservation outcome that has not been achieved and the likely reasons that this/these conservation outcomes have not been met.

HERITAGE MANAGEMENT

- 12) To mitigate impacts on the built heritage value of the Blamey Barracks Kapooka military area, the approval holder must complete the implementation of the measures set out in Attachment B, at least three years before the end of the period for which approval is granted.

MANAGEMENT OF PFAS CONTAMINANTS

- 13) Prior to the **commencement of the Action**, the approval holder must prepare and submit to the **department** any relevant **PFAS management plans** that set out how **harm to protected matters** from **PFAS** contaminants during **construction** will be avoided and mitigated. In preparing **PFAS management plans**, the approval holder must be consistent with the following documents:
 - a) the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (Cth),
 - b) the **PFAS National Environmental Management Plan (PFAS NEMP)**, and
 - c) the **National Water Quality Management Strategy**.
- 14) Where there are multiple **PFAS management plans** managing the risk from **PFAS** contaminants during **construction**, the approval holder must articulate in a cover note and/or the **PFAS management plans** how the **plans** work together to provide a complete and integrated response to the management of **PFAS** contaminants during **construction**.
- 15) When providing the **department** with the **PFAS management plans** or any revised versions, the approval holder must provide for each **plan** a letter of endorsement from a **suitably qualified and experienced environmental practitioner** of their assessment of the adequacy of the **PFAS management plan** to protect the environment from an action on Commonwealth land.
- 16) The approval holder must implement the **PFAS management plans**.
- 17) By implementing the **PFAS management plans**, the approval holder must prevent any avoidable **harm to protected matters** and mitigate unavoidable and accidental **harm to protected matters**.
- 18) All commitments, including environmental outcomes, management measures, corrective measures, trigger values and performance indicators in the **PFAS management plans** must be **SMART** and based on referenced or included evidence of effectiveness. The **PFAS management plans** must be consistent with the **Environmental Management Plan Guidelines** and must include:
 - a) details of the relevant **protected matters** and a reference to **EPBC Act** approval conditions to which the **plan** refers,

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- b) a table of commitments made in the **plan** to achieve the environmental outcomes, and a reference to where these commitments are detailed in the **plan**,
 - c) details of:
 - i) contamination screening and work element specific risk assessments that will be performed to characterise **cut material** and site water for beneficial reuse in the **Action area** or offsite disposal,
 - ii) a protocol for beneficial reuse of **cut material** and site water within or between work elements of the Action to minimise the risks of **PFAS** mobilisation and dispersion, in accordance with 'Section 12: Re-use of **PFAS**-contaminated materials including soils and water' of the **PFAS NEMP**,
 - iii) materials and stockpile management and dust control in accordance with 'Section 10: On-site stockpiling, storage and containment' of the **PFAS NEMP**,
 - iv) off-site disposal of soil and/or **construction** water, in accordance with 'Section 11: Transport of **PFAS**-contaminated material' and 'Section 14: **PFAS** disposal to landfill',
 - v) dewatering, surface water, and/or **construction** water management, including how the freshwater 95% species protection criteria for **PFOS**, **PFOA** and/or **PFHxS**, as specified in the **PFAS NEMP**, will be implemented to ensure that water discharged from the **Action area** does not impact downstream receptors, and
 - vi) how the **HIL C (public open space)** values will be used for assessing human health risks,
 - d) reporting and review mechanisms to demonstrate compliance with the commitments made in the **plan**,
 - e) an assessment of risks relating to achieving the environmental outcomes and risk management strategies that will be applied to address identified risks,
 - f) details of the qualifications and experience of the environmental consultants involved in preparing the **PFAS** management **plans** and the reviewers and approvers of the **plans**.
- 19) The approval holder must ensure that following the **completion of the Action**, there is a **PFAS** management **plan** in place for the Blamey Barracks Kapooka military area that provides for the ongoing management of any residual contamination in the **Action area**, including risk assessment, contingency planning, remediation actions and monitoring.
- 20) Within 20 **business days** after the **completion of the Action**, the approval holder must provide details of the **PFAS** management **plan** required under condition 19.

Part B – Administrative conditions

REVISION OF ACTION MANAGEMENT PLANS

- 21) The approval holder may, at any time, apply to the **Minister** for a variation to an action management **plan** approved by the **Minister** by submitting an application in accordance with the requirements of section 143A of the **EPBC Act**. If the **Minister** approves a revised action management **plan** (RAMP) then, from the date specified, the approval holder must implement the RAMP in place of any previous version of the action management **plan**.

SUBMISSION AND PUBLICATION OF PLANS

- 22) Wherever these conditions require the approval holder to submit any **plan** to the **department**, all such **plans** must be submitted to the **department** electronically.
- 23) Unless otherwise agreed to in writing by the **Minister**, the approval holder must publish each **plan** on the **website** within 15 **business days** of the date the **plan** is approved by the **Minister** in writing, if the **plan** requires the approval of the **Minister**.
- 24) The approval holder must keep all **plans** published on the **website**, in a format that is easily accessible and downloadable, from the first date which that **plan** must be published and until the expiry date of this approval. This requirement applies to all current and superseded versions of **plans**.
- 25) The approval holder is required to exclude or redact **sensitive biodiversity data** from any version of a **plan** before that **plan** is published on the **website** or otherwise provided to a member of the public. If **sensitive biodiversity data** is excluded or redacted from a **plan**, the approval holder must notify the **department** in writing what exclusions and redactions have been made in the version published on the **website**.

COMMENCEMENT OF THE ACTION

- 26) The approval holder must notify the **department** electronically of the date of **commencement of the Action**, within 5 **business days** following **commencement of the Action**.
- 27) The approval holder must not **commence the Action** later than 5 years after the date of this approval decision.

COMPLIANCE RECORDS

- 28) The approval holder must maintain accurate and complete **compliance records** and document the procedure for recording and storing **compliance records**.
- 29) If the **department** makes a request in writing, the approval holder must provide electronic copies of **compliance records** to the **department** within the timeframe specified in the request.

Note: Compliance records may be subject to audit by the **department**, or by an **independent auditor** in accordance with section 458 of the **EPBC Act**, and/or be used to verify compliance with the conditions. Summaries of the results of an audit may be published on the **department's website** or through the general media.

- 30) The approval holder must ensure that any **monitoring data**, surveys, maps, and other spatial and metadata required under the conditions of this approval are prepared in accordance with the *Guidelines for biological survey and mapped data*, Commonwealth of Australia 2018, or as otherwise specified by the **Minister** in writing.
- 31) The approval holder must ensure that any **monitoring data**, surveys, maps, and other spatial and metadata required under the conditions of this approval are prepared in accordance with the *Guide to providing maps and boundary data for EPBC Act projects*, Commonwealth of Australia 2021, or as otherwise specified by the **Minister** in writing.
- 32) The approval holder must submit all **monitoring data**, surveys, maps, other spatial and metadata and all species occurrence record data (sightings and evidence of presence) electronically to the **department** within 20 **business days** of the next anniversary of the date of this approval decision except where otherwise specified in a **plan**.

ANNUAL COMPLIANCE REPORTING

- 33) The approval holder must prepare a **compliance report** for each **Annual Compliance Report period (ACR period)**.
- 34) The approval holder must ensure each **compliance report** includes:
 - a) accurate and complete details of compliance and any non-compliance with:
 - i) each condition attached to this approval decision, and
 - ii) all commitments made in each **plan**,
 - b) a schedule of all **plans** in effect in relation to these conditions during the **ACR period**,
 - c) accurate and complete details of how each **plan** was implemented during the **ACR period**, and
 - d) if any **incident** occurred, accurate and complete details of each **incident**.

Note: after **completion of the Action**, the **compliance report** in relation to management of **PFAS** contaminants in the **Action area** need only state that **PFAS** is being managed in accordance with the **PFAS** management **plan** required by condition 19.

- 35) The approval holder must ensure each **compliance report** is completed to the satisfaction of the **Minister** and is consistent with the *Annual Compliance Report Guidelines*, Commonwealth of Australia 2023.
- 36) The approval holder must, within 20 **business days** following the end of each **ACR period**, in a format that is easily accessible and downloadable, publish on the **website**:
 - a) each **compliance report**, and
 - b) a **shapefile** showing all **clearing** of **BGW** undertaken within the **ACR period**.

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- 37) The approval holder must:
- a) Exclude or redact **sensitive biodiversity data** from each **compliance report** and **shapefile** published on the **website** or otherwise provided to a member of the public.
 - b) If **sensitive biodiversity data** is excluded or redacted from a version of a **compliance report** published or otherwise provided to a member of the public, submit the full **compliance report** to the **department** within 5 **business days** of its publication on the **website** and notify the **department** in writing what exclusions and redactions have been made in the version published on the **website** or otherwise provided to a member of the public.
 - c) If **sensitive biodiversity data** is excluded or redacted from a version of a **shapefile** published or otherwise provided to a member of the public, submit the full **shapefile** to the **department** within 5 **business days** of its publication on the **website** and notify the **department** in writing what exclusions and redactions have been made in the version published on the **website** or otherwise provided to a member of the public.
- 38) The approval holder must notify the **department** electronically, within 5 **business days** of each date of publication that the **compliance report** has been published on the **website**. In this notification, the approval holder must provide the **department** with the web address for where the **compliance report** and related **shapefile** are published on the **website**.
- 39) The approval holder must keep each **compliance report** and related **shapefile** published on the **website** from the first date which that **compliance report** must be published and until the expiry date of this approval.

Note: **Compliance reports** may be published on the **department's website**.

REPORTING NON-COMPLIANCE

- 40) The approval holder must notify the **department** electronically, within 2 **business days** of becoming aware of any **incident**. The approval holder must specify in each notification:
- a) any condition or commitment made in a **plan** which has not been, or may have not been, complied with,
 - b) a short description of the **incident**, and
 - c) the location (if applicable, including co-ordinates), date and time of the **incident**.
- 41) The approval holder must provide to the **department** in writing, within 12 **business days** of becoming aware of an **incident**, the details of that **incident**. The approval holder must specify:
- a) all corrective measures and investigations which the approval holder has already taken in respect of the **incident**,
 - b) the potential impacts of the **incident**,
 - c) the method and timing of any corrective measures that the approval holder proposes to undertake to address the **incident**, and

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- d) any variation of these conditions or revision of a **plan** that will be required to prevent recurrence of the **incident** and/or to address its consequences.

INDEPENDENT AUDIT

- 42) The approval holder must ensure that an **independent audit** of compliance with the conditions is conducted for every **audit period**.
- 43) The approval holder must submit details of the proposed **independent auditor** and their qualifications to the **department** within 10 **business days** following the end of each **audit period**.
- 44) The approval holder must ensure the scope of each **independent audit** is sufficient to determine the compliance status for each condition of approval, and each commitment made in each **plan**.
- 45) The approval holder must ensure the criteria for each **independent audit** and the undertaking of each **independent audit** are consistent with the **Independent Audit and Audit Report Guidelines** to the extent that the Guidelines are consistent with these conditions.
- 46) The approval holder must submit an **audit report** to the **department** for written agreement from the **department** within 3 months following the end of each **audit period**, or as otherwise directed by the **Minister** in writing.
- 47) The approval holder must ensure each **audit report** is completed to the satisfaction of the **Minister** and is consistent with the **Independent Audit and Audit Report Guidelines**.
- 48) The approval holder must publish each **audit report** on the **website**, in a format that is easily accessible and downloadable, within 10 **business days** of the date the **department** agrees to that **audit report** in writing.
- 49) The approval holder must notify the **department** within 5 **business days** of the date the **audit report** is published on the **website**. In this notification, the approval holder must provide the **department** with the web address for where the **audit report** is published on the **website**.
- 50) The approval holder must keep each **audit report** published on the **website** from the first date which that **audit report** must be published and until the expiry date of this approval.

COMPLETION OF THE ACTION

- 51) Within 20 **business days** after the **completion of the Action**, and, in any event, at least 20 **business days** before this approval expires, the approval holder must notify the **department** electronically of the date of **completion of the Action** and provide **completion data**. The approval holder must submit any spatial data that comprises **completion data** as a **shapefile**.
- 52) The approval holder must notify the **department** electronically 60 **business days** prior to the expiry date of this approval, that the approval is due to expire.

Note: Section 145C of the **EPBC Act** entitles the approval holder to request an extension to the period of effect of this approval.

Part C – Definitions

Words and terms appearing in **bold** (excluding headings) have the meaning assigned to them in the list below:

Action area means the location of the Action, represented in Attachment A by the pink shaded polygons labelled ‘Action area’, including the **BGW direct impact area**.

Annual Compliance Report period or **ACR period** means each subsequent 12-month period following the date of this approval decision until the expiry date of this approval, unless otherwise specified in writing by the **Minister**.

Audit period means each subsequent five-year period following the **commencement of the Action** until the expiry date of this approval unless otherwise specified in writing by the **Minister**.

Audit report means a written report of an **independent audit**.

BGW means the **EPBC Act** listed threatened ecological community White Box-Yellow Box-Blakely’s Red Gum Grassy Woodland and Derived Native Grassland.

BGW direct impact area means the areas of **BGW** within the **Action area**, represented in Attachment A by the red polygons labelled ‘BGW direct impact area’.

Biodiversity data means ‘biodiversity data’ as described in the *Policy on Accessing and Sharing Biodiversity Data*, Commonwealth of Australia 2024.

Business day means a day that is not a Saturday, a Sunday, or a public holiday in NSW.

Clear, cleared or **clearing** means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting, or burning of vegetation (but not including weeds – see the *Australian weeds strategy 2017 to 2027* for further guidance).

Commence the Action or **commences the Action** means the first instance of any on-site **clearing, construction** or other physical activity associated with the Action, but does not include minor physical disturbance necessary to:

- undertake pre-clearance surveys or monitoring programs,
- install signage and/or temporary fencing to prevent unapproved use of the **Action area**, so long as the signage and/or temporary fencing is located where it does not **harm** any **protected matter**,
- protect environmental and property assets from fire, weeds, and feral animals, including use of existing surface access tracks,
- install temporary site facilities for persons undertaking pre-commencement activities so long as these facilities are located where they do not **harm** any **protected matter**,

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- sample soils for **PFAS** contamination provided this causes only minor physical disturbance, will not **harm** any **protected matter** and is required in advance of commencement of site works.

Commencement of the Action means the date on which the approval holder **commences the Action**.

Completion data means an environmental report and spatial data clearly detailing how the conditions of this approval have been met.

Completion of the Action means the date on which all activities associated with the approved Action, other than implementing the OMP, have permanently ceased and/or been completed, as indicated by the signing of the Notice of Completion under the main construction contract for the Action.

Compliance records means all documentation or other material in whatever form required to demonstrate compliance with these conditions of approval (including compliance with commitments made in **plans**) in the approval holder's possession, or that are within the approval holder's power to obtain lawfully.

Compliance report means a written report of compliance with, and fulfilment of, these conditions (including compliance with commitments made in **plans**).

Offset area means the area of **BGW** identified in the OMP approved by the **Minister** for enduring conservation protection.

Construct or construction means:

- the erection of a building or structure that is, or is to be, fixed to the ground and wholly or partially fabricated on-site,
- the alteration, maintenance, repair or demolition of any building or structure,
- any work which involves breaking of the ground (including pile driving) or bulk earthworks,
- the laying of pipes and other prefabricated materials in the ground, and
- any associated excavation work.

Construct or construction does not include the installation of temporary fences or signage, or soil and water sampling in the **Action area** for characterisation of **PFAS** contamination.

Cut material means soil, gravel, rock and other material currently constituting the ground in the **Action area** that is excavated or moved as part of the Action.

Department means the Australian Government agency responsible for administering the **EPBC Act**.

Environmental Management Plan Guidelines means the *Environmental Management Plan Guidelines*, Commonwealth of Australia 2024.

Environmental Offsets Policy means the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, Commonwealth of Australia 2012.

EPBC Act means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Habitat quality means a measure of the overall viability of a site and its capacity to support **protected matters**, with respect to site condition, site context and species stocking rate and/or composition.

Harm means to cause any measurable direct or indirect disturbance or deleterious change as a result of any activity associated with the Action.

HIL C (public open space) means the **PFAS NEMP** human health investigation level (HIL) for soil, based on a public open space (HIL C) land use.

Incident means any:

- event which has the potential to, or does, **harm any protected matter**,
- potential non-compliance with these conditions, including the administrative requirements,
- actual non-compliance with these conditions, including the administrative requirements,
- potential non-compliance with one or more commitment made in a **plan**, and/or
- actual non-compliance with one or more commitment made in a **plan**.

Independent audit means an audit, conducted by an **independent auditor**, of compliance with and fulfilment of these conditions and the commitments made in **plans**, objectively evaluated against the audit criteria developed by the **independent auditor**, in accordance with the **Independent Audit and Audit Report Guidelines** to the extent that the Guidelines are consistent with these conditions.

Independent Audit and Audit Report Guidelines means the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines*, Commonwealth of Australia 2019.

Independent auditor means a person, or firm, who:

- does not have any individual, financial*, employment* or family affiliation or any conflicting interests with the Action, the approval holder or the approval holder's staff, representatives, or associated persons,
- has demonstrated experience in undertaking government-regulated environmental compliance audits, and

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- holds relevant professional qualifications and accreditations.

*Other than for the purpose of undertaking the role for which an independent person, or firm, is required.

Minister means the Australian Government Minister administering the **EPBC Act**, including any delegate thereof.

Monitoring data means the data required to be recorded under the conditions of this approval, including **sensitive biodiversity data**.

National Water Quality Management Strategy means the guidelines for water quality management developed as part of the *National Water Quality Management Strategy*, Australian Government, 2018.

PFAS means Per- or poly-fluoroalkyl substance.

PFAS National Environmental Management Plan or **PFAS NEMP** means the current official version of the *PFAS National Environmental Management Plan* produced by the Heads of EPAs Australia and New Zealand and endorsed by the Commonwealth of Australia and each Australian State and Territory.

PFHxS means Perfluorohexane sulfonate.

PFOA means Perfluorooctanoic acid.

PFOS means Perfluorooctane sulfonate.

Plan means any action management plan or strategy that the approval holder is required by these conditions to implement.

Protected matter means a matter protected under a controlling provision in Part 3 of the **EPBC Act** for which this approval has effect.

Secure / secured / securement means to provide enduring conservation protection on the title of land under an enduring protection mechanism agreed to in writing by the **department**, to provide protection for the site against development incompatible with conservation.

Sensitive biodiversity data means **biodiversity data** which, if released, published or otherwise exposed, may result in **harm** to the relevant **protected matter** as a result of the intentional or unintentional misuse of that **biodiversity data**.

Shapefile means location and attribute information about the Action provided in an Esri shapefile format containing:

- '.shp', '.shx', '.dbf' files,
- a '.prj' file which specifies the projection or geographic coordinate system used, and
- an '.xml' metadata file that describes the shapefile for discovery and identification purposes.

SMART means specific, measurable, achievable, relevant and time-bound.

Suitably qualified ecologist (for the purpose of preparing and implementing environmental management plans) means a person who has at least 5 years of work experience designing and implementing conservation land management for **BGW** and has demonstrated their capability in achieving specified environmental outcomes and **habitat quality** uplift through conservation land management.

Suitably qualified and experienced environmental practitioner means a professional who can demonstrate relevant qualifications and experience in the assessment of contaminated sites to a level appropriate to the site under investigation, as specified in section 4.2 of Schedule B9 of the *National Environment Protection (Assessment of Site Contamination) Measure 1999*.

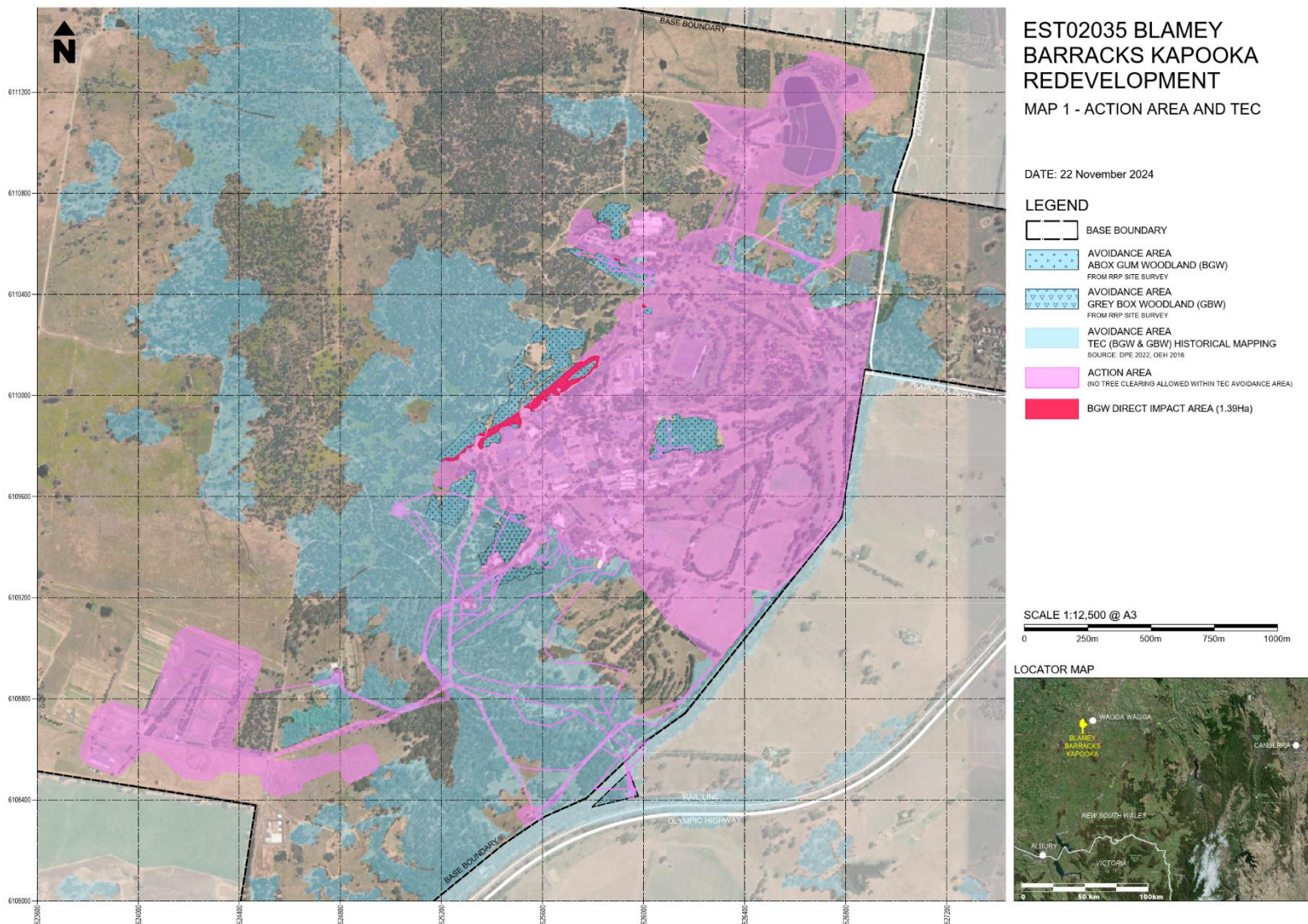
Website means a set of related web pages located under a single domain name attributed to the approval holder and available to the public.

Attachments

Attachment A – Location of the **Action area** and **BGW direct impact area**

Attachment B – Mitigation measures for impacts to built heritage values

Attachment A – Location of the Action area and BGW direct impact area



Attachment B – Mitigation measures for impacts to built heritage values

- B1: Preparation of a professional, archival recording of the current site with a focus on those buildings to be demolished considering their internal and external layout and function.
- B2: Preparation of an Oral History report that:
- a) collects audio and/or video testimonies of graduates and staff, where the participants have been chosen from the various decades of use – from the 1960s through to the present
 - b) includes photographs associated with the occupation of the living in accommodation (LIA) (an overlap with the archival recording)
 - c) includes a report that summarises the main themes from the participant’s memories
 - d) is recorded in a format that can be publicly accessible (if appropriate under Defence security requirements), either onsite or through an online archive.
- B3: Preparation of an Interpretation **Plan**, which is to include consideration of:
- a) the existing content in the Interpretation Strategy (Appendix J of the Heritage Management **Plan** (HMP; Umwelt, 2022), in particular, consultation with the Army History Unit on the implementation of any heritage interpretation
 - b) integration of interpretive material regarding the 1960s Blamey Barracks era into the:
 - i) Kapooka Heritage Trail, a pathway between the visitor carpark to the proposed Multi-Function Centre and Parade Ground
 - ii) proposed recruit LIA precinct
 - iii) proposed multi-function centre
 - iv) main Parade Ground
 - v) former Post Office
 - c) making content from the archival recording and oral history available online and onsite
 - d) the reuse of materials, particularly the red bricks in landscaping
 - e) measures to ensure the architectural style and materiality can be understood as an interpretive measure.
- B4: The design of new buildings is to comply with Policies 48 to 52 of the HMP to the extent possible, in order to consider how the architectural style and materiality of new buildings can be understood as an interpretative measure of the former buildings, such as:
- a) large-scale buildings, arranged in a symmetrical ‘disciplined’ layout
 - b) rectilinear forms, preferably rectangular footprints, rather than winged

- c) limited roof overhangs, placing the visual emphasis on the tall, smooth vertical faces of the buildings
 - d) buildings are visible in the round and set in grassed areas
 - e) warm, rich tones akin to red brick
 - f) vertical architectural expressions of the window fenestration with no dominant horizontal expression, resulting in a solid, anchored building
 - g) consideration as to whether the fibre cement sheeting proposed for the LIA development can be textured, or the size of the sheeting reduced to minimise the visual impact of large flat sheeting
 - h) LIA signage should be built in red brick as per concept design.
- B5: Retain and seek to adaptively re-use the remaining Blamey Barracks (1960s) era rectangular buildings as representations of this era at Kapooka. Buildings to be retained include the Officers' and Sergeants' Messes, where their function/use will remain extant and Buildings 11 and 13 (existing accommodation buildings). The Base management will continue to work on identifying adaptive re-use options, and these are likely to be retained as existing visitor or overflow accommodation.
- B6: In relation to the proposed adaptive reuse of the Edmondson Soldier's Club:
- a) replacement of original/early doors which will be impacted are to be further detailed in consultation with the heritage consultant
 - b) the original early walls proposed for removal are to be interpreted in the building fabric through the retention of nubs in the wall and accompanied by onsite interpretation
 - c) the principles in the Defence Technical Guide: Adaptive Reuse (Department of Defence, 2022) should be considered and integrated into the detailed design.

Appendix F

Rapid response protocol for fauna
entrapment



F1 Rapid response protocol for fauna entrapment

This appendix outlines the Rapid Response Protocol for Wildlife Entrapment and Injury associated with exclusion fencing and other infrastructure within the offset area. The protocol is designed to minimise animal suffering and ensure timely intervention in accordance with best practice animal welfare standards. It will be reviewed and updated periodically as part of the adaptive management framework outlined in Section 7.3 of this OMP.

1. Immediate response and reporting

- Cease nearby activities to avoid further distress or injury to the animal.
- Notify a licensed wildlife carer or rescue organisation immediately:
 - WIRES: 1300 094 737
 - RSPCA NSW: 1300 278 3589.
- Maintain a list of local wildlife contacts (e.g. WIRES, RSPCA, local veterinarian) in all site vehicles and offices.

2. Safety and containment

- Ensure responder safety before approaching the animal.
- Only trained personnel may handle wildlife.
- Use PPE (e.g. gloves, towels) to minimise zoonotic risk.
- If safe, contain the animal in a ventilated box or carrier and place in a quiet, shaded area.

3. Documentation

- Record the event in the Wildlife Incident Register.
- Include date, time, GPS location, species, condition, and actions taken.
- Photograph the scene if safe to do so.

4. Post-event review

- Inspect the fence or infrastructure involved.
- Identify and rectify any design flaws or damage.
- Consider installing escape points or modifying fence design if repeated incidents occur.

5. Training and awareness

- Provide annual training for relevant personnel on wildlife safety and emergency response.
- Include wildlife response in site inductions.
- Display laminated quick-reference guides at key access points.

This protocol supports the corrective actions outlined in Table 6.5 and complements the monitoring and adaptive management framework described in Section 7. It is intended to ensure that wildlife safety is prioritised and that exclusion fencing does not result in unintended harm to native fauna.

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